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ORIGINAL ARTICLES.

SOME NOTES ON THE BRITISH CONGRESS ON TUBERCULOSIS.

BY E. G. JANEWAY, M.D.,
OF NEW YORK.

By request of your President, Dr. Hermann Knapp, a request at first declined, I have consented to give a brief relation about the British Congress on Tuberculosis which I attended by invitation as one of the honorary vice-presidents. I fear it may be like a twice-told tale. At the same time a symposium has been arranged on certain matters relating to tuberculosis considered at that meeting.

The Congress, which convened in London during the last week of July (22 to 26, 1901) was a marked success. The arrangements were such as not only provided for but produced an orderly meeting. Anyone who subscribed the regular fee became a member. In addition, delegates were sent to represent medical, municipal, or other corporations, as boards of health, the state government and other governments or departments. Moreover, a certain number of physicians from other countries were invited as honorary vice-presidents. Amongst these—to name only a few—were Profs. Koch, Leyden, Gerhardt, Flugge from Germany; Profs. Bouchard, Brouardel, Lendouzy, Nocard from France; and from America, Drs. Dennison, Dock, Knopf, Musser, Osler, and Adami of Montreal. This gave to the meeting an international character, instead of restricting it, as the name might seem to imply, to the consideration of tuberculosis as it affected the British nation. Too great credit cannot be given to those more particularly responsible, as it implied a great deal of very hard work on their part, not alone to arrange for the scientific and practical side of these meetings which lasted for four days, but also to fill in the gaps with social amenities for the members, delegates, and those accompanying them.

In this way there was a reception on the evening preceding the opening of the Congress, a reception at the Mansion House by the Lord Mayor and the Lady Mayoress; a reception at the Victoria and Albert Museum, South Kensington, by the Earl of Derby and the Countess of Derby; a river party at Richmond by Sir J. Whitaker and Lady Ellis, and a garden-party at Syon by the Duke and Duchess of Northumberland.

The King, who was much interested in the Congress and who as Prince of Wales had intended to preside at the opening meeting, received a certain number of the delegates from other countries. The Duke of Cambridge opened the Congress on behalf and by the request of the King at the first general meeting and received addresses from chosen representatives of foreign countries. Dr. Osler spoke for America. On the last evening the British members gave a dinner to the foreign delegates and vice-presidents at the Hotel Cecil. Throughout you will see that the foreign representative was cared for, and that not alone his knowledge of tuberculosis, but also his acquaintance with those working in the field was broadened.

The control of tuberculosis is a matter which outweighs in importance any medical question before us. All those circumstances which may hasten the time when the amount of the disease shall be lessened should be welcomed and such as may retard the event should be deplored. What we wish to know, however, is the truth regarding the conditions against which we must use the greatest effort.

At three of the general meetings of the Congress addresses were delivered as regards the means or measures which should be adopted. The first was by Robert Koch, to whom the medical world is so much indebted for his brilliant discoveries and painstaking investigations. He approached the subject from the side of its method of development and considered that all the facts pointed to the sputum of tuberculous individuals being the main source of infection. He advocated in consequence devotion of energy toward the prevention of this infecting sputum becoming a source of danger. Whatever aided this was to be encouraged—prevention of expectoration, notification of those affected with tuberculosis to public officials, and, in particular, measures such as those adopted in New York City for the disinfection, etc., of rooms. He praised Dr. Biggs for his share in this work. The lessened death-rate in England, he believed, was to be ascribed in a large measure to the hospitals for consumptives existing there, and hence he advocated the erection of special hospitals for consumptives, endowed by wealthy individuals, by municipalities and by the State. He then drew attention to the benefit of instruction of all classes of people as regards the dangers of intercourse with individuals affected with tuberculosis, and of the consumptive as to what he was to do when he coughed and how he should treat his sputum. He also spoke on sanatoria as a means of lessening the dangers from the disease, by curing properly selected cases before they reached the infectious stage. He did not believe that the statistics, particularly those in Germany, proved that we could rely on these as greatly aiding in prevention. The figures which he gave were that in Germany there were 226,000 people over fifteen years of age in such advanced stages of consumption that hospital treatment is necessary for them. The sanatoria at present existing could only accommodate 20,000 in a year, of which

judging by the past 4,000 would be freed of the bacilli in their sputum. He said that the sanatoria would never render the other measures superfluous, but, if the number become great and if they perform their functions properly, they may aid the strictly sanitary measures in their conflict with tuberculosis.

Prior to these declarations he had created much surprise to such of those who had not foreknowledge by declaring emphatically his disbelief in the identity of human and bovine tuberculosis for the following reasons: Experiments on properly selected animals (cattle) showed that the bacilli originating from human tuberculosis when inoculated or injected in cattle or when fed to them would not induce tuberculosis. Moreover, he believed that, while it was not proper to make a contrary experiment by using bovine tubercle bacilli in human beings, we had a practical experiment in the fact that milk and butter contained to a considerable degree bovine tubercle bacilli. Now, if the danger existed, as had been supposed, we should have a much greater amount of primary intestinal tuberculosis, which was found to be a very rare condition in Berlin. He said that he had conducted his experiments on animals during the past two years in order to produce this proof. His conclusion was that we could neglect the care of meat and milk as the cause of tuberculosis, using these words: "I should estimate the extent of infection by the milk and flesh of tuberculous cattle and the butter made of their milk as hardly greater than that of hereditary transmission, and I do not deem it advisable to take any measures against it." This certainly is a very important statement, so much so that Koch himself suggested that it should be confirmed by the experiment of others.

We have with us to-night the pioneer in the work of the study of the difference between human and bovine bacilli, obtained by observing the effect of injections of cultures from each source in cattle, Dr. Theobald Smith, who reported his work in this direction to the Association of Physicians in Washington, May, 1896, and who again made a second communication in 1898 to the same Association. I have asked him to be present in order that he may give you the benefit of his five years' study, experience and conclusions. In his published statement he was more cautious as regards the possibility of the infection of human beings by bovine bacilli from the udder of affected cows in the milk supplied to children. I am sure that the Academy will appreciate the presence of a quiet worker for years in this particular field and pay attention to the views which he will give us.

You may ask me what are the views which I entertain upon so important a matter? I said at London that friction will produce light and light illumination and that in the end the truth will prevail. I have had one experience within recent years which has made me cautious. This related to a group of three children in one family living in a near-by New Jersey town, affected with tuberculous glands in the neck, which were later removed by Dr. McBurney at the Roosevelt Hospital. When these children were brought to my office, I cross-examined the mother as to the origin of the trouble, and at first she thought that the milk supply was all right, but on her return home she was informed by her cook that some time before blood had been present in the milk. I immediately had word sent to the State Board of Health of New Jersey, asking for an examination which was made a week later, but in the meantime the cow which had been ill disappeared. Not alone these children, but the children of two neighbors had the neck glands affected; they all took the same milk supply. I had a careful inquiry made as to other possible sources of infection in the house, but with a negative result. It has always been a matter of regret that a more prompt investigation was not possible, for I feel reasonably sure that the source of infection may have been a contaminated milk supply. *Per contra,* a few years ago a mother brought to me her child who had drunk largely for some years of the milk of one cow which had been found to be tuberculous, and, on being killed, was found to be affected throughout by tuberculosis. Over a year had elapsed since the destruction of the cow, the child showed no evidence of tuberculosis, and there was greater danger of the mother than of the boy, owing to her extreme anxiety.

It is apt to be assumed that if a child has primary intestinal tuberculosis, this would necessarily be ascribed to the milk. Koch has stated that he has made some experiments with such tuberculosis by injecting, etc., into cattle without much proof so far, *i. e.,* if of human it ought not, if of bovine origin it ought to prove infective.

In children creeping on the floor, putting fingers and other objects in the mouth, the possibility of infection should not be lost sight of. In the case of bone, joint, glandular tuberculosis, we may not have proof of primary site of entry. My attention was particularly drawn to the possibility of infection of children in this way when, at Quarantine Hospital on one occasion, I noticed the children from a cholera ship playing on the ground and putting their hands in little pools of water and then in the mouth; cholera had been marked in the emigrant children on the steamship. Hence this exists as a possible source, providing a case of tuberculosis is present in the particular place examined or can have had access to it. I feel, moreover, that till it has been shown that milk from tuberculous cows, and especially from cows with tuberculous udders, is harmless, we must continue our efforts to obtain a pure milk supply. I cannot believe that milk from diseased cattle will furnish the food that is best for infants and children, in whom the results, even if not tuberculous, might be such impairment of health as to constitute one of the causes predisposing to a habit of body rendering it liable to an inroad of tuberculosis from some other source. In view, moreover, of the greater effect of bovine tuberculosis upon animals

other than the human, it does seem as if men might react to bovine tuberculosis when cattle would not react to human. One swallow does not make a summer, nor one case prove anything except that no harm happened to that subject.

At a subsequent meeting when tuberculin was discussed Prof. Koch was asked whether the tuberculin in use was all human or partly bovine in origin, and the inquiry was also made why should cattle react to tuberculin from human tuberculosis if insusceptible to it. The reply to the first was that it was all from human type; to the second, according to my understanding, relationship of bacilli was the explanation.

On the day but one following, Prof. McFadyean made a reply at the general meeting in a paper upon tubercle bacilli in cow's milk as a possible source of tuberculous disease in man. In this paper the main contention was, first, that the greater virulence of the bovine bacilli for other species of animals argued that it might very probably be pathogenic for man also; second, that the statistics of the hospital in Great Ormond Street, London, examined by Dr. George Still, and those of the Royal Hospital for sick children in Edinburgh, by Sheenan, seemed to point toward a greater frequency of primary infection through the intestine. The first gave 29.1 and the second 28.1 as the percentage of tuberculous infection by the alimentary tract. I have asked certain of the Fellows of the Academy to consider this question, and to state so far as they are able their experience and views on the liability of cow's milk to be a source of tuberculous infection.

Prof. McFadyean recommended: (1) Compulsory notification of udder disease, and of any symptoms of tuberculosis in milch cows, with of course the power to inflict a fine for not reporting; and (2) the interdiction of the sale of milk from any cow suffering from tuberculous disease of the udder or exhibiting clinical signs of tuberculosis. He was not inclined to believe that it was practicable in Great Britain to use the tuberculin test in all infected herds, or to compel the isolation or slaughter of all cows reacting to this test. The obstacle was that one-third of all the cows in Great Britain giving milk were tuberculous.

I trust that this short abstract will induce the members to read the entire paper, if they have not already done so. As regards Prof. Koch's paper, I presume all the members have already perused it; if not, I would urge their doing so, as I have omitted mention of some factors, such as cases which ought to be segregated and the earlier comparative allusions.

In order, however, to illustrate the difference of views which obtained, Prof. Brouardel in his address at the second special meeting laid great stress on the laws in England which were enacted for the building of better houses and for the improvement of the sanitary condition of old houses as one great cause of the improvement in the death-rate from pulmonary tuberculosis in Great Britain, which in fifty years has amounted to fifty per cent. He also laid great stress upon alcoholism as an adjuvant in the weakening of the system and rendering it liable to tuberculosis. He spoke also in favor of dispensaries for tuberculosis and of seeking out the tuberculous invalid instead of waiting until he should apply. He would have workmen as agents who would notify when a fellow coughed. He spoke also in favor of sanatoria. His paper was a review of what was being done in different countries against tuberculosis.

The Congress was subdivided into four sections, viz., (1) municipal, (2) medical, including climatology and sanatoria, (3) bacteriological and pathological, and (4) veterinary. In each of these work was carried on in the mornings, many interesting papers being read and discussions conducted. At the municipal section a paper by Dr. Biggs on "Notification" was read. It contained reasons for making this compulsory, defining what was to be understood by this and giving statistics of favorable results attributed to it. It led to considerable discussion.

The discussion of tuberculin as an agent for the diagnosis and cure of tuberculosis was also much debated. Dr. Koch was one of the principal speakers. Regarding it as a curative agent he took practically the same ground as Dr. E. L. Trudeau has taken, viz., that it was only to be employed in afebrile cases; as a diagnostic agent he had employed it in 3,000 cases without bad results. Having prevented one person from suing a physician who had used it for diagnosis, whereby rapid phthisis had resulted, I am not in the same position.

The discussion on mixed infection and phases of tubercle bacilli, etc., was also of much interest.

Interesting papers on sanatoria and on climate were presented, and the demonstration of radiographs of the lungs showing capability of demonstration of lesions of tuberculous nature was favorably received. The Academy will recall Dr. Williams's demonstration of this matter. At the Section of Veterinary Medicine the consideration of tuberculosis in cattle was discussed in its different phases.

I cannot dismiss this portion of the subject without speaking in terms of greatest praise of the Museum of the Congress on Tuberculosis and of its descriptive catalogue, compiled and edited by Dr. W. Jobson Horne, Honorary Secretary to the Museum Committee. The catalogue of one hundred and forty-nine pages was descriptive of preparations from different museums which had been gathered into a room convenient to the hall of meeting. Perhaps as interesting as any were the five culture-tubes of tubercle bacillus originally obtained by Prof. Koch in August, 1881, from the miliary tubercle of a man and carried through four hundred and thirty-five sub-cultures without again going through the animal body. The cultures of the tubercle bacillus and of organisms resembling it were also well developed. The part on morbid anatomy of tuberculosis was also very full and instructive. To

the lay mind it must have provoked thoughts of future possibilities.

To Malcolm Morris, the Honorary Secretary of the Congress, much praise should be given for those labors which were entailed by his position and to which he proved equal before and during the Congress.

The result of the Congress was given in a series of resolutions adopted on the afternoon of the last day. These were as follows: (1) Human expectoration is the chief source of danger, or cause of production of phthisis. (2) Measures should be adopted to secure the destruction of the sputum. (3) Notification is under certain conditions necessary. (4) The construction of sanatoria, especially for the poor, should be favored. (5) All measures hitherto in force against tuberculosis in cattle should be adhered to. (6) Koch's experiments should be repeated, and established by others—a committee. (7) An international committee should be formed. (8) Due consideration should be given to the contributing causes, such as alcoholism. (9) Participation in unions or associations was favored. (10) The theme for the next Congress was the individual disposition to tuberculosis.

The proceedings have been published and each of you may read for himself if these hints make you desire. I regard early recognition of the presence of the disease in an individual as a matter of prime importance, not alone for the cure, but also for prevention. Each patient whom we rid of the bacilli and prevent from reaching the advanced stage is a great gain. It seems almost superfluous to speak on this subject here and yet, unless great care is exercised in each case coming to us with a slight cough and somewhat departing from the normal healthy condition, we are liable to overlook the incipient stage of the malady. No one should be examined unless the chest be bared of all but a thin unstarched garment. Moreover, we must be on our guard not to assume that tuberculosis cannot be present should the ear fail to detect any very striking deviation from the healthy standard. Take the cases which begin with slight hemoptysis, and I suppose that you know when it has ceased, how little of a sign may be present? This leads not a few physicians to claim that it originated from the throat. We should aim at making a diagnosis before we find dulness and marked respiratory changes. These will not come with the affection of a small bronchus, but suspicious slight evidence of an apex catarrh may be made out. My own practice is to subject every case of this kind to examination of the sputum for tubercle bacilli, to comparative weighing, to study of the thermometric record taken four times daily in the rectum for a week, and to repeated examination if not satisfied. We owe to Robert Koch a debt of great magnitude for the ability to distinguish the tubercle bacillus. What course remains under these circumstances if one should still be undecided? We may act on suspicion and send the patient to a different climate and surroundings without an absolute diagnosis, or we may employ tuberculin or the iodide of potassium to increase secretion around a disease focus or the Roentgen rays (see Dr. William's work). I feel that we do not frequently enough act on suspicion rather than on proof. This method is all right for the wealthy when frankly explained, and probably for those of moderate means; but for the poor, for those dependent upon daily labor, it is an impossibility. But, as I said years ago and as Brouardel has enunciated, of what avail will it be if we seek out those who are in the incipient stage, unless we may direct them to a place where health may be restored? Of course an altered mode of life, better nutrition, and appropriate medication may restore some, even within the confines of a large city. Some undoubtedly have sufficient vitality to overcome the disease without radical change; but for the majority there is a gradual or quicker further invasion. For these we need an increased accommodation in already existing sanatoria and new sanatoria. We may search out the tuberculous invalid in the beginning of his illness, but to his cry of "What shall I do?" shall we only educate him as regards the care of the sputum to prevent him becoming a source of infection to others? Or shall we in some near future be able to say that the municipality, the State, or some wealthy philanthropist has provided a place to which he can go with a fair chance of recovery? There are certain such sanatoria in the Adirondacks, as the one over which Dr. Trudeau presides, also the San Gabriel, and one projected at Stony Wolde. There exist also the Loomis Sanitarium at Liberty, that at Bedford, and some even within the confines of New York City, but these have not sufficient room; some are not properly placed for incipient cases and some could not take care of those unable to pay for support. Yet I am in favor of a plan by which we either seek out the tuberculous invalid or else advise him to be carefully examined by a competent physician, and, when this has been accomplished, may be able to tell him go here or there for his recovery.

Dr. E. L. Trudeau the other day told me that he had thirty-five on the waiting-list of the sanatorium at Saranac. Here I wish to digress so far as to voice a word of praise for the splendid work which Dr. Trudeau has accomplished at Saranac. I can recall the look of disappointment which came over his features when over twenty-five years ago I told him that he had incipient trouble in one lung. He had then a bright future opening before him in this city, but I do not believe that he would have accomplished more for the good of others than has been his privilege in that Adirondack wilderness to which he later went for the restoration of his own health. Through his instrumentality many have been cured and many alleviated. Moreover, through the laboratory, he has done much to protect the profession and the public from injury and deceit.

Let us then ask that provision shall be made in order that the consumptive invalid can be ac-

commodated. Fellows, you and I advise people ill with this disease to go to the country. Possibly, if of little means, they seek out a farmhouse in the mountain regions, where no one watches to see that they do not become source of infection to the proprietor, to his family or to guests. This is a matter to which either the State Board of Health or local boards should give heed, and of the necessity of action I have no doubt. But the action should be reasonable, based on those requirements as regards expectoration, disinfection, etc., which exist in the city. The provision of sanatoria sufficient to take charge of these people would obviate the danger and be of distinct educational value to the invalid. This Academy has already passed resolutions asking the city government to act in this matter. Several of the Fellows interested in this phase of to-night's topic will give you their views and also statements as regards sanatoria which they represent.

Whilst the sanatoria for incipient and curable cases should be situated in the best location, it is also desirable that hospitals should be made for those far advanced in the disease, where uniformity of action shall insure the destruction of the bacillus, give comfortable surroundings to the sufferer, and prevent him being a source of danger in the wards of a general hospital. Certain hospitals already exist, and the city, as I understand, pays for the board of such as can be received at these institutions, but I am informed that there are insufficient accommodations or improper surroundings.

Some Fellow may ask, how many incipient cases are there? I think that we may look at the number dying each year as answering that question to a certain degree, *i. e.*, the number that have hitherto begun and succumbed. It does not represent the number who recover, which should be added. So we may be sure that for the Borough of Manhattan or The Bronx there are over 5,000; and with those that recover it would not be unreasonable to suppose that between seven and eight thousand people are each year made serious victims to tuberculosis.

The diminution in number of people dying of tuberculous diseases is a matter of great interest and, as I have stated, can be and was ascribed to different causes. Certainly the statistics of Great Britain show a reduction of 50 per cent. of those dying of pulmonary consumption in the fifty years since 1851. The statistics in New York, as Dr. Biggs has pointed out, show a reduction of over 30 per cent. The same is true of other places.

The practical teaching is that we must urge that the greatest possible regard should be paid to sanitary conditions in the homes of the poor; that measures should be carried out such as are in force in New York; that hospitals should be provided which can accommodate the consumptive in his later stages, so that he may not infect others in a general hospital or in the confined walls of a small home; that sanatoria whether by increased accommodation in those existing, or by construction of new, should be provided from funds given, or taxed for; that cases should be sought out in the early and more curable stage; that means should be provided which shall insure to the invalid in the early stage good food as well as medicine, when the means are too restricted to procure this; that the public education as regards the true nature of the disease should be continually carried on; that the pocket handkerchief should not be used as a cuspidor; that all conditions which weaken the body are adjuvants to the bacillus, and hence the need of instruction as to the best means of maintaining health.

Tuberculosis in other situations without secretion is not dangerous to others, nor is tuberculosis of the lung, provided no bacilli are contained in the sputum. It is dangerous, however, to have people suppose because a single examination has shown no bacilli in the sputum that their expectoration is not a source of danger.

As regards views on the milk supply, I have already spoken, and consider it desirable to continue efforts for a pure product. The following is a communication from Dr. E. L. Trudeau, who was invited to take part in this symposium, but could not be present. He will thus give you his views and experience on the use of tuberculin and on sanatoria.

"SARANAC LAKE, N. Y., Dec. 10, 1901.

"MY DEAR DR. JANEWAY:

"You ask me for a few words in regard to my experience with tuberculin and sanitarium methods.

"During the past ten years I have used tuberculin, both as an aid to diagnosis and as a specific method of treatment. As an aid to diagnosis I have applied the tuberculin test mostly in suspected cases of incipient tuberculosis of the lungs, and, with a few exceptions, the test has proved reliable and has enabled me to make a positive diagnosis before this could be done by the rational or physical signs alone. I have never seen any harm from the application of the test in the class of cases in which I have used it, or any evidence that it had had an injurious effect on the tuberculous process. But of late years I have confined its application strictly to apyretic cases, or such as were nearly so. It should not be used when there is much fever, because the results obtained in such cases are apt to be unsatisfactory and misleading, and because, too, it has seemed to me that it might be unsafe, not on account of any injurious effect on the tuberculous process itself, but principally because the hyperemia it induces may tend to aggravate and intensify the secondary infection generally present to a greater or less degree in patients with any temperature above 99.5° to 100° F. Pleuritic cases, enlarged lymph-nodes, cases of slight hemoptysis without rational or physical signs, and those patients in whom a depreciation of health exists with occasional slight disturbances of temperature and no expectoration, or expec-

toration in which the bacilli cannot be demonstrated, and slight or obscure physical signs, furnish the best field for its application.

"We know that tuberculosis may exist for months and even longer before it is possible to detect it by the usual methods, and an early diagnosis is of such vital importance to the patient and to the success of his treatment that any agent which will enable the physician to make the earliest possible diagnosis should be applied in suitable cases. The tuberculin test should not be used indiscriminately or carelessly, and it is but rarely necessary to employ it.

"I have also used tuberculin as a specific method of treatment and still consider it in the experimental stage. For this reason I have confined its application to patients at the Sanitarium only, where its effects could be carefully watched. Its application in the active types of the disease, and in sufficiently large doses to produce repeatedly marked reactions, is certainly inadvisable and often injurious. In the apyretic cases, in which there is no reason to suspect any secondary infection and when the patient's nutrition is good, if given in small and very gradually increased doses so as not to produce any marked rise of temperature, its use has been found free from danger and the proportion of recoveries in the patients treated has been encouraging.

"Susceptibility to the action of tuberculin varies to a most marked degree in different patients, according to idiosyncrasy and the extent and type of disease. In some the dose may be increased quite steadily without any constitutional disturbance, while in others the slightest attempt to increase the dose will be followed by the usual symptoms of tuberculin reaction. In these the treatment will have to be extended over many months, and will require the utmost patience and caution before any immunity to the toxin is obtained. The most painstaking care and skill are necessary in the application of this method. After the patient has been brought to tolerate fairly large doses, the treatment should be discontinued and resumed after an interval of two or three months; and, if susceptibility to a repetition of increasing doses remains, a course of treatment similar to the first should be continued until full doses are again tolerated. Cases thus treated seem to show somewhat less tendency to relapse than those which recover under climatic and hygienic methods alone, and would indicate that some degree of immunity had been induced.

"Although I have used several varieties of tuberculin in the treatment of these cases, I do not feel in a position to form any opinion as yet as to the relative merits of these preparations. The method of applying such specific treatment has thus far been purely empirical and will continue so until laboratory researches throw more light on the mechanism of artificial immunity against bacterial diseases. The recent researches on hemolysis and bacteriolysis promise to advance our knowledge on this all important subject. It is evident, however, that the production of a marked degree of toxin immunity does not necessarily mean complete bacterial immunity in the disease; this treatment is still in the experimental stage and it must be admitted that it is limited to cases which are likely to recover under the ordinary climatic and hygienic treatment for the disease.

"My experience in the application of sanitarium methods during the past eighteen years has steadily increased my faith in this mode of treatment as the best means at our command to arrest and cure tuberculosis and this is becoming now generally recognized. Eighteen years ago, when I undertook to make a practical application of Brehmer's methods by founding an institution in which these could be applied in treating persons of moderate means, the advantages which the sanitarium plan offers were not understood and I could with difficulty fill the few beds in my institution. At present the benefits of sanitarium treatment have become generally accepted and the applications for admission have increased so rapidly that, notwithstanding the growth of the institution, only a fraction of those who apply can be taken and several such sanitaria could be filled in a short time.

"The sanitarium insures to the patient the best conditions for his recovery, namely, the systematic application of the open-air and climatic method; the regulation of his daily life as to exercise, food, sleep, etc.; the proper care and treatment of his case during the exacerbations and accidents of the disease; protection from the dangers of secondary infection, and a thorough education as to the future management of his case and the care necessary to prevent his being a source of danger to others. All these advantages cannot be secured in open resorts.

"It has been urged as one objection to sanitaria that the expense attending this mode of treatment puts it beyond the reach of most patients who are dependent on their own exertion for support.

"This difficulty will have to be met soon by suitably endowed institutions and by the coöperation of the State. My own institution has met it for eighteen years, and confined its work *entirely* to patients who cannot pay more than five dollars a week, the deficiency each year being made up by subscriptions of those interested in the work. Such institutions, however, should not be left dependent on so precarious a support, but should be endowed and should offer a broad field for private philanthropy.

"Although the sanitarium is but one factor in the general struggle against tuberculosis, it is one of which we stand in great need. Sanitaria tend to limit the spread of this disease, and, if it is conceded that they offer the best chance of recovery, they should be placed within the reach of all. We need more sanitaria, not only for the working classes and for people of moderate means, but for the rich as well.

"Very truly yours,
"E. L. TRUDEAU."

THE RELATION BETWEEN BOVINE AND HUMAN TUBERCULOSIS.[1]

BY THEOBALD SMITH, M.D.,
OF BOSTON;
GEORGE FABYAN PROFESSOR OF COMPARATIVE PATHOLOGY IN THE MEDICAL SCHOOL OF HARVARD UNIVERSITY.

IT was with considerable hesitation that I accepted an invitation to discuss the relation between human and bovine tuberculosis at this time. The events of the past few months have shown that work, rather than opinions and words, is needed to put an important branch of our sanitary service on a firmer basis. The present occasion, I realize, needs a broad general statement of the problem and I have therefore omitted all technical details which I hope to incorporate with some new matter in a later paper. I furthermore realize that any position taken to-day may have to be somewhat modified when confronted with the results of experiments likely to be made in the immediate future on this now engrossing subject.

In general, my standpoint to-day does not differ from that of 1898, when I stated that a beginning had just been made by a recognition of the bovine bacillus as a race or variety of the mammalian stock of tubercle bacilli. With this point gained, the next step was to trace this bovine race into the human body and in this way gain an insight into its transmissibility. But it required the authority of a Koch, reversing his own long-standing conclusion, to awaken the lethargy of investigators, start new commissions, and arouse the opposition of public-health and other officials whose labors in the suppression of bovine tuberculosis seemed about to be blocked by forces always prepared to fight anything opposed to their personal and material gain. The situation is thus a very complicated one and views and opinions must somehow be accepted as working hypotheses to keep the machinery of public health in operation. With this fact as a guide I venture to review the situation and present views which have forced themselves upon me in endeavoring to get at the actual state of affairs.

That human and bovine bacilli are not necessarily identical occurred to me nearly ten years ago in watching the effects of the inoculation of bovine virus, infected milk and sputum upon guinea-pigs. The character and progress of the guinea-pig disease was highly suggestive of variations in virulence. Differences of this nature could be demonstrated only with pure cultures, because then the number of bacilli injected could be made approximately equal. When, in 1894-1895, I isolated and studied a bovine culture and one from an animal (*Nasua narica*) domiciled with a tuberculous man, the great difference in virulence as tested on cattle, as well as certain morphological differences, impressed me with the idea that distinct races of the tubercle bacillus existed. In 1896 these studies were again taken up in the then newly-established laboratory of comparative pathology of the Harvard Medical School and with the aid of the Massachusetts State Board of Health, and in 1897 a sufficient number of pure cultures had been isolated to enable me to test the bovine and the human cultures on cattle in parallel series. The coöperation of the Massachusetts Cattle Commission, through its chairman, Dr. Austin Peters, enabled me to test ten cultures on as many cattle. The outcome confirmed earlier studies and led me to state that we are justified, "if only to guide and stimulate further study, in establishing a distinctly human and a bovine variety of the tubercle bacillus."

The bacteriological method is not the only one which must be applied in putting the bovine bacillus into its proper place, but I think that it forms the key-stone of the arch without which facts and observations obtained by other means fail to hold their place. It will eventually serve to clinch arguments from all other sources.

Among these the records of clinical observation have occupied a very conspicuous place in the polemical literature of this subject. Placed by itself, the evidence which they present is, I think, inherently weak. We all know on what slippery ground we stand when we endeavor to trace the etiology of an infectious disease without recourse to the laboratory, with its more penetrating, analytical methods. The difficulties are greatly increased when we try to find with absolute certainty the source of infection in a subject as little under control in his movements as man and in a disease as insidious in its beginnings as tuberculosis. Clinical observations are, however, of very great value in forming the foundation of the bacteriological work and in guiding the bacteriologist to the most promising material for study.

The cases of direct inoculation as reported by Ravenel, Salmon and others cannot decide the question for us. An inoculation does not under all circumstances correspond to natural infection. Animals which are susceptible to certain diseases by inoculation do not necessarily contract them by cohabitation. Cowpox as a derivative of smallpox is an inoculable, but no longer a contagious disease. Again, the production of a limited amount of dead tissue in a wound may give the requisite impetus to an organism otherwise overcome or repelled at the start by the natural protective agencies. This brings before us that important, still unsolved problem, the phenomena attending the beginnings of infection, especially on the mucous membranes. It is quite possible that something interferes with the absorption of tubercle bacilli of bovine origin which lets human bacilli pass. Or, it may be that if human bacilli are absorbed only with difficulty in the intestines this difficulty is greatly increased for races of bacilli specifically modified by adaptation to other species.

One phase of the clinical problem which has created little attention is the possible infection of the human subject through the infected air of cow-stables. The great majority of cases of bovine tuberculosis are the result of infection

[1] Read at a meeting of the New York Academy of Medicine, Dec. 19, 1901.

through the air. In 1894 I carefully analyzed my autopsy notes of 88 cases of the bovine disease and found 85 with lesions of the thoracic organs. Of these 41 were evidently discharging tubercle bacilli from disintegrating foci in the lungs. Here a rich field of activity presents itself for the tubercle bacillus from cattle, but we have as yet no evidence whatever that human beings are infected in this way. Physicians favorably situated should give cases among dairymen careful attention and bring them to the notice of the bacteriologist for study.

Turning to the bacteriological aspect of the subject upon which I have already touched and taking into consideration the comparative studies of bovine and human bacilli made by the writer, Vagedes, Dinwiddie, Ravenel and Koch, we may now maintain without fear of contradiction that the bovine bacillus presents certain traits which serve to distinguish it from the great majority of bacilli isolated from the human subject. These traits or characters are not the exclusive property of the bovine bacillus as contrasted with those from human sources. I am merely emphasizing the constancy of such characters and not their peculiarity.

Morphologically the bovine bacillus multiplying on coagulated serum is uniformly short, never slender or slightly curved, as is the case with many human forms. Culturally it grows with great difficulty even on serum and I have not been able to make it grow on glycerin-agar at the start. Later these difficulties disappear under artificial cultivation. Other minor differences will, I think, be found in the near future. As to virulence this is quite uniform and very great for rabbits, whereas the majority of human cultures are not. The difference between human and bovine bacilli in their effect on cattle is now well established. Koch emphasizes the increased virulence of bovine bacilli for horses, swine and sheep.

Tuberculins made at the same time from cultures of both races have been repeatedly tested by me upon tuberculous guinea-pigs. No appreciable differences were noted in the effect produced. The tuberculins made from bovine cultures have been used by colleagues in the diagnosis and treatment of this disease in man, and, so far as I have had verbal communications, the results did not differ from those obtained from tuberculin made from human cultures. The same was found true in regard to its use on cattle. This identity of action must not surprise us. The subtle race differences could hardly be expected to survive repeated and prolonged boiling.

When we come to sum up the characters of human bacilli we find much less uniformity. The cultivation is as a rule easier, but variations occur. Some bacilli are so saprophytic in their tendencies that they grow from the start on glycerin-agar. Others refuse to do this. Some grow in moist glistening layers, others in the more common, dry, scaly or nodular masses. Bacilli from some cultures are short, resembling the bovine type, others are long and slender. The special form is as a rule preserved for years in cultures. Slight variations in the culture media, though they may have a temporary effect on the form, do not persist when we return to the original media. Only after years of cultivation changes of outline are occasionally noticed which, I think, are referable to the capsule. The virulence likewise fluctuates, but in none of my cultures was there any approach to the virulence of the bovine race. This may have been simply an accident. Vagedes, who isolated a series of twenty-eight human cultures, describes one which seems to have had the characters of the bovine race.

It was obtained from a girl, fifteen years old. She entered the hospital November 12, 1895. Both parents and a brother and a sister had succumbed to tuberculosis. The girl had both apices affected in June, 1894. In November, 1894, both lungs were extensively infiltrated. There was high hectic fever. Death ensued May 24, 1896. Both lungs and intestines were found involved.

It is somewhat remarkable that this exceptional culture of Vagedes, described in a work done under the direction of Koch himself, was wholly ignored by the latter.

Lartigau in a recent study of nineteen human cultures is inclined to regard one of them as of bovine origin.

A more thorough study of similar bovine-like bacilli to be found in the future and the inoculation of young cattle with them, in addition to rabbits, which species I regard as very valuable in making a preliminary distinction between these races, are obviously the next steps. If we should in any case of spontaneous tuberculosis isolate bacilli agreeing morphologically, in virulence, and in the character of the tissue reaction of the inoculated animals with the bovine bacillus, we must be prepared to concede the case as one of bovine origin. But, assuming this point to have been gained, there are other questions growing out of it.

1. What is the reason for so few positive infections with so much opportunity given for infection through dairy-products?

2. Is there any ground for assuming a modification of the bovine into the human type in the body of man and in this way accounting for more positive infections?

Taking up the first question I am inclined to believe that racial differences are operative in preventing the absorption of the bovine bacillus under ordinary circumstances by mucous surfaces. I say absorption, because in early life the type of disease approximates that of cattle, in that the bacilli tend to pass through the mucosa to lodge and multiply in the lymph-glands. This similarity must not be construed as pointing to an identity in the etiology. I am further inclined to believe that when infection does occur certain pathological conditions, among them traumatism, are present to favor it. Hence the belief which now seems to gain ground and which I voiced in

1898 that a few bacilli are harmless, but that the flooding of the digestive tract with bacilli from tuberculous udders is dangerous. In the latter case the bacilli are continually present and prepared to act at any time when the conditions become favorable.

The second question involves fundamental principles of etiology. To what extent is the bovine bacillus modifiable in the human body? Can it lose its identity therein? In order to state the case as fairly and judiciously as possible I presented this possibility of modification in 1898 in the following way: Can a long sojourn of the bovine bacillus in the human body lead to its gradual modification so that, entering by way of the digestive tract it may eventually appear in the sputum from the phthisical lung with only a moderate degree of virulence? The only facts we have at present to keep this hypothesis before us is the wide range of virulence of human bacilli, from saprophytized forms unable ever to infect a normal body, but only capable of acting as secondary parasites, to those forms approximating the virulence of the bovine type.

The modification of bovine bacilli in the same human body beyond recognition as such by the bacteriologist, if it ever occurs, necessarily presupposes a prolonged sojourn, probably of years, at the shortest. This again implies an initial resistance of the human system to the high degree of virulence of the bovine bacillus whereby only a mild type of tuberculosis results. While I accept the possibility that bovine bacilli may change if they multiply in the human body, I do not believe that such a change can take place excepting after a number of passages. The experiments of Vagedes and my own (unpublished) indicate that passages through rabbits do not perceptibly modify the bovine bacillus. Hence, in searching for a direct infection from cattle in infants or children for example, especially in the primary foci of the mesenteric glands, I am of the opinion that the bovine bacillus, if there, would be found with undiminished virulence. If it should become modified after a long stay in the body of resistant adults, future study may be relied on to find the successive stages of modification.

On the whole, if we accept the hypothesis of a modification in the same individual, we acknowledge thereby that the human body is capable of exerting a specific resistance over the bovine bacillus which largely neutralizes the high potency of the latter.

The modification of bacteria is not sufficiently understood at present to afford any sound basis for our attitude toward bovine tuberculosis. Used without restraint, it may be made to prove anything. Thus we may, with its aid, assume, as has been done repeatedly, that all human tuberculosis is bovine in origin. The highly potent virus entering the human body becomes attenuated and when it is discharged in the sputum it is no longer infectious, or it may lose its power to infect after several passages through human beings. Thus, the cow would be the source of all active virus. But the bovine virus is propagated from animal to animal chiefly in the same way, *i. e.*, through sputum, yet it does not appear to be losing its virulence. These hypotheses are given to illustrate the importance of steadying the flights of our imagination by chaining it to patient research within and without the laboratory and accepting only those premises which have successfully passed a severe scientific scrutiny.

Even the hypothesis that the bovine bacillus may become modified in the human body leads us to the same inference already reached—that a few tubercle bacilli are harmless, because the specific resistance which we must assume as existent would easily take care of a few bovine bacilli.

It seems to me that the only way to refrain from doing violence to the accumulated knowledge of bacteriology is to take the ground that the bovine bacillus, if it invade the human body, should appear as such in our cultures. Especially in the young should this be our guide, for tuberculous lesions of the abdominal organs, the mesenteric glands in particular, in children are not so old as to jeopardize the identity of a bacillus which maintains unimpaired for years its morphological and physiological characters in our cultures. The investigator, however, must keep before him the possibility that bacilli from one species grafted on another may become altered.

I am loth to leave this subject without calling attention to the possible aid we may derive from comparative pathology in a problem of such importance as this. Man is but one of a species of mammals, and in the search for fundamental principles we will fail if our studies are confined by the traditional boundaries of human pathology. When we come to the working-out of details we must return to the species the advancement of which we have in view.

As regards the transmissibility of bacteria, racially related among themselves, from one species of animal to another certain facts are at hand. There are several large groups or races of bacteria besides the tubercle bacillus which exercise a wide influence upon animal life. One of these comprises the races of the so-called rabbit-septicemia bacillus. Here we have bacilli indistinguishable from one another which produce epizootics among mammals and birds. But it is becoming more and more evident that these races are pathogenetically distinct. Only last year a striking illustration of this fact came to my notice. In conjunction with Dr. Cooper Curtice of the Rhode Island Experiment Station I isolated a race of this species from a highly fatal septicemia in geese which was of maximum virulence to rabbits. Although this species has been known for many years, since the earlier labors of Pasteur, to produce fowl-cholera, yet this particular race, so fatal to geese, had no effect on other fowls. Epizootics due to this bacterium among buffaloes, according to Von Ratz, did not pass to cattle, a species also subject to an infectious disease due to another variety of this bacterium.

Similarly the large group of pathogenic derivatives of bacillus coli affect many species of mammals and some birds and occasionally man in epidemics of meat-poisoning. These varieties maintain indefinitely their minor differences in cultures and in their activities they are sharply confined to a particular animal species. They are also differentiated by the agglutinins which they call forth in the immunized animal.

On the whole, the student of comparative etiology is inclined to regard the apparently identical, or, at most, but slightly divergent races of such bacteria as transmitted only sporadically and under special conditions to species other than the one in which they regularly cause disease only sporadically and under special conditions. Ordinarily the plagues or epizootics are sharply delimited in spite of the constant intermingling of different species of animals. Everything points to the theory that the particular variety produced by adaptation has gained something as well as lost something during this period of adaptation which makes it act successfully toward a certain species or a narrow group of species only.

Nor does it seem that a bacterium which has gained the power to act upon some large powerful species, like the ox, necessarily acquires thereby the power to attack smaller species. Thus, the bovine tubercle bacillus readily invades swine, but I have been unable to produce any effect on mice with it. We have within recent years had our attention forcibly called to the peculiar susceptibility of man to a disease of the rat, while spontaneous infection of species other than rats and mice by the plague bacillus is not yet confirmed.

Tuberculosis passes from man or cattle under certain conditions to dogs and cats. These animals will, I believe, furnish evidence of value in the problem before us. I have thus far had the opportunity of isolating and studying comparatively cultures from three cats and one dog. Should I draw any conclusion now I would say that they are from man. In any event we have here the important habit of flesh-eating to consider in its relation to the races of the tubercle bacillus.

The glanders bacillus furnishes still another illustration. The transmission of glanders from the horse to man is a firmly established fact. When we, however, take into consideration the large number of glandered horses found each year and the number of persons who come into close contact with such animals, the transmission from beast to man dwindles into a rare occurrence.[1]

Summing up the evidence from comparative pathology, I should say that we have no right to assume the indiscriminate transfer of bovine bacilli to man without thorough investigation. For we know that there are no *a priori* rules to guide us in predicting the susceptibility of any animal species toward any variety of micro-organism. There are no natural groups of animals which react alike toward bacteria. Each species is a physiological unit by itself, possessing certain relationships to other species which only experiment and observation may discover. The remarkable studies on hemolysis by Bordet, Ehrlich and others, pay ample tribute to this fact. It is equally obvious that we are not justified in accepting at present the sweeping, and what appear to me hasty, inferences drawn by Koch from his experiments that the bovine bacillus cannot invade the human body. As the broad student of infectious diseases Koch is correct, I think. The differences between bovine and human bacilli are too striking to lead the experimenter to any other preliminary conclusion at first. The study of details and the example before us of a great range of species occasionally invaded successfully by tubercle bacilli soon convince us that exceptions may occur and that the next step is to discover how often and under what conditions we may look for them.

The conclusions which may be drawn provisionally from the foregoing may be tersely stated under the following heads:

1. There is no evidence to show that bovine tubercle bacilli may indiscriminately infect the human subject.

2. There is some evidence that bovine bacilli have been isolated from human beings, that the successful transfer is uncommon and that it depends on certain conditions which need careful clinical and pathological study.

3. The evidence that such transmission takes place must be based on the isolation of tubercle bacilli having the characters of the bovine variety.

The attitude which these conclusions would lead us to assume toward bovine tuberculosis, at least for the present, does not differ appreciably from that now generally maintained. Periodical rigid inspection of dairy-herds, looking toward the elimination of all animals with suspicious disease of the udder or tending toward emaciation should be maintained. Beyond this sanitarians cannot well go, but every effort should be made to encourage publicly by suitable official recognition those who use the tuberculin test in purifying dairy-herds. Bovine tuberculosis is at best an agricultural calamity and its widespread diffusion and frightful ravages should arouse even the most conservative to bring about by individual effort rather than with the help of the public purse the rehabilitation of the dairy-cow.

[1] The Cattle Commissioners of Massachuetts state in their report for the year 1900 that 699 animals were killed as having glanders or farcy. There were reported to them during the same year two undoubted and one doubtful case of the same disease in man.

A PLEA FOR AN ACCEPTED NOMENCLATURE WITH REFERENCE TO THE CLASSIFICATION OF PULMONARY TUBERCULOSIS.[1]

BY J. EDWARD STUBBERT, M.D.,
OF NEW YORK;
PHYSICIAN IN CHARGE, LOOMIS SANITARIUM, LIBERTY, N. Y.; PROFESSOR OF PULMONARY DISEASES, NEW YORK POST-GRADUATE MEDICAL SCHOOL.

IT is not my intention to present a long paper to explain theories or statistics; but rather

[1] Read before the American Climatological Association, 1901.

to set forth a few statements showing the inaccuracy of statistics as compiled to-day by various observers on tuberculosis, with the hope that the few ideas presented will provoke a discussion which will lead to the adoption by this Society of certain fixed definitions that shall be accepted as the basis upon which all statistics must be built in order to enjoy the confidence of the profession at large, and, especially, to merit consideration by scientific observers. No one, I believe, will doubt either the necessity for some common and positive basis upon which to build statistics and compute results, or the fact that there is no Society in this country or abroad the scope of whose work or the standing of whose members renders it as capable of deciding the question before us.

While statistics are, to some extent, unreliable, we cannot dispense with them. All conclusions must be derived therefrom, and yet great confusion exists, not only in conclusions so drawn by widely-separated observers, but among those intimately associated in work. In Massachusetts, we find Bowditch and Otis widely divergent upon the definitions "cured," "apparently cured," or "arrested cases"; while in New York we find as wide a difference of opinion between Trudeau, Baldwin and the writer in defining the difference between "apparently cured" and "arrested" cases. At the meeting of the Medical Board of the Loomis Sanitarium, held in New York about three years ago, there were present Drs. Polk, Loomis, A. A. Smith, W. Walker, Quimby, F. Miller, Chappell, Markoe, Beverley Robinson, and the writer, and yet no two men held exactly the same opinion as to where the dividing lines should be drawn between the incipient and moderately-advanced, or between the latter and the far-advanced stages of pulmonary tuberculosis.

There are, then, two conditions to be classified: (1) The condition of the patient when he comes under observation and treatment; (2) the condition that exists when he is discharged from the physician's care. Under the first heading, we have to deal with three, and, possibly, four, conditions: (*b*) Incipient; (*c*) moderately advanced; (*d*) far advanced; and, as a fourth, but naturally preceding the others, (*a*) variously designated as the "pretuberculous" or "prebacillary" stage.

By a large number of physicians, including such men as Baldwin, Trudeau, Knight, Babcock, and Bowditch, a "pretuberculous" stage is not recognized, but accepted as a general dyscrasia, such as might precede the development of any infectious disease; or, in other words, that would make infection possible. I find, however, that a few, *viz.:* Baldwin, Babcock, Bowditch, Brown, and Janeway, will allow the term "prebacillary" while objecting to the term "pretuberculous," although the majority do not think the term necessary. Another physician (Brown) considers the term "prebacillary" as synonymous with the incipient stage of tuberculosis; two others (Loomis and Ingals) see no difference in the meaning of the two terms.

The definition, gathered from the different ideas, is as follows: One in which tuberculosis is suspected, but where the symptoms are slight and bacilli can not be found in the expectoration. No one, however, has suggested what name shall be given to moderately or far-advanced cases in which tubercle bacilli are not present.

Others again, notably Ingals and Hance, affirm their belief in a so-called "pretuberculous" stage, which they define as follows: A condition in which the physical signs are indefinite, and in which there are loss of weight and strength, a rapid heart action, slight fluctuation in temperature, and sometimes a slight hacking cough.

In comparing notes on the definition of an incipient case, I find that Loomis, Trudeau, Knight, Babcock, Bowditch, Hance, and Ingals agree in all essential points, the following being the general idea gained by such comparison: Slight physical signs of limited extent in one or both lungs, with or without bacilli in the sputum, with or without slight constitutional debility or complications. Another authority (Hance) recognizes such a stage only when bacilli are present together with the usual symptoms; and another (Baldwin) claims that slight physical signs may be present or absent, provided the rational symptoms point to such a condition.

As to the definition of the term "moderately advanced," I find an agreement in the most important points in the opinions of Loomis, Baldwin, Trudeau, Hance, Knight, Babcock and Brown. The definition is as follows: More or less well-marked constitutional symptoms, with extensive signs in one or both lungs; or where there is only a slight amount of pulmonary involvement, with very severe rational symptoms. Another noted physician (Bowditch) is more reserved, and does not allow the term if there is evidence of decided consolidation or cavity formation; while still another (Ingals) relies solely on the extent of the physical signs.

There seems to be a general harmony in the definition of the term "far advanced," the composite idea being: A far-advanced case is one in which there are extensive physical signs with or without cavity formation, and in which there is severe constitutional disturbance, with or without complications.

Once we are finished with a patient, it becomes a question of even greater importance how to properly classify or index him. Shall we declare him "cured," "apparently cured," "arrested," or "improved"? Here again we find a wide divergence of opinion among competent observers. Very few are willing to declare a patient cured until a considerable length of time has elapsed without manifestation of any symptoms of the former disease. Ingals and Baldwin say that they require a patient to pass at least two years free from all signs of disease, rational or physical. Another physician (Loomis) makes the same requirement, except that no time limit is

given. Brown, Trudeau, Hance, and Knight do not use the term. Ingals and Babcock consider the term synonymous with that of "apparently cured." Bowditch classifies all such cases as "arrested." The term "cured" seems to be in disfavor with the majority of those whose opinions were received, while that of "apparently cured" appears to be the most acceptable.

Probably the greatest difference exists in the definition of the term "apparently cured." Some observers, such as Trudeau, Brown and Baldwin, place the time limit at three months, the writer at six months; while two others (Loomis and Hance) give no time limit; another one year; some others, two or three years; and one (Babcock) considers the term as synonymous with "arrested." A composite definition, leaving out the question of time, would be: Absence of all rational symptoms of disease, and disappearance of nearly all physical signs, or only those that would be indicative of scar tissue.

Apropos of this subject, I would like to submit the following statistics: Out of a number of cases at the Loomis Sanitarium, there was a reappearance of bacilli in seven cases after having been absent for three months; in three cases after having been absent four months; in three cases after an absence of five, six, and seven months, respectively, and in one case after disappearing for three and one-half years. However, in this last case it should in justice be stated that the patient has never been free from a condition of chronic bronchitis since she was seven years old.

We now come to the term "an arrested case." Again, there is great confusion as to the exact meaning of the word. As to the time limit, Knight and Trudeau agree that a quiescent condition should exist for several months, while Babcock and Bowditch say months or years. Baldwin places the time limit at two or three months, while Ingalls, Hance, and Loomis make no arbitrary rule.

As to the question of the presence of bacilli in the sputum, Brown, Babcock, Bowditch, Knight, and Ingals claim that bacilli must be absent; while Loomis, Baldwin, Hance, and Trudeau declare a case "arrested" while bacilli are still present, provided, of course, the general condition and physical signs justify such a term. A fair definition compiled from the opinions of the majority, leaving out the question of time, would be: Absence of all constitutional symptoms, including cough and expectoration and, therefore, bacilli; physical signs to show no further activity, although the limits of diseased areas may remain the same.

In regard to the last term to which I call your attention, namely, "improved," I am glad to say there is a very general agreement, a good idea being given by the following: Lessened or improved symptoms, local or general, or both. The only point of difference noted is that the majority require both local and general improvement, while a few require only an improvement in general condition.

Special work has grown so during the past few years, sanatoria and hospitals for the care of these patients are multiplying so rapidly, it would seem not only wise but imperative, from a scientific standpoint, that now, before the machine becomes too unwieldly and greater confusion has been created by lack of harmonious work, a more or less fixed definition of these various stages of pulmonary tuberculosis should be determined upon. Then statistics from all recognized sources can be worked together harmoniously and deductions of scientific value may be realized.

SUPPLEMENT.

Prebacillary or Pretuberculous Stage.

"The condition of an individual whose family history, personal appearance, physique and age, experience has proven in the majority of cases, antedate the active development of tuberculosis. This stage is generally marked by persistent chloranemia, uncontrollable digestive disturbance, inexplicable rapid heart action, and progressive loss of weight."—H. P. Loomis.

"Prebacillary, meaning 'closed' or non-ulcerated tuberculosis, could include all cases described by certain writers as pretuberculous, which, according to their own description, are nearly always already infected, and the symptoms clearly secondary to such infection. Prebacillary is likely to confuse, as some very acute bad cases reveal bacilli. I should prefer to use it in a very restricted sense, or to dispense with it altogether. Definition: No symptoms and no bacilli. 'Pretuberculous' stage not necessary."—E. R. Baldwin.

"Not recognized."—E. L. Trudeau.

"Terms synonymous. Definition: Slight hacking cough, with some languor and emaciation, but no expectoration, and no distinct physical signs."—E. Fletcher Ingals.

"Pretuberculous stage designates the time antecedent to that in which physical signs and microscopical examination indicate disease; evidences of impaired health, loss of weight, strength, rapid heart action, slight fluctuation in temperature, general malaise, anemia, etc."—I. W. Hance.

"I do not think the term should be used; it is not properly applicable to any infectious disease."—F. I. Knight.

"There is no pretuberculous stage. There may be a prebacillary stage, if by this term is meant a stage in which no bacilli are contained in the sputum, but if there is tuberculosis there are certainly tubercles. Always supposing that by a pretuberculous stage was meant a latent tuberculosis."—R. H. Babcock.

"Great objection to term 'pretuberculous.' Prebacillary' stage is permissible because of cases in which tuberculosis is suspected, but no bacilli can be found, or only after a length of time. I do not like to use the term 'prebacillary.' "—V. Y. Bowditch.

"Prebacillary (excluding tuberculous pneumonia and miliary tuberculosis). Definition: In-

cipient stage before ulceration. Pretuberculous stage not necessary; often erroneously applied to the early part of incipient stage."—Laurason Brown.

"A prebacillary stage is one in which tubercle bacilli are absent, and frequently expectoration also. In a minority of cases there will be found by blood examination a certain amount of anemia, with loss of weight, possibly digestive disturbances, or physical signs may be totally, or almost totally, absent. By X-ray examination there must be shown a very slight haze, generally at one apex. Very often in these cases suspicious sounds may be elicited at the apex, which would not be detected without attention having been first called to them by the aid of the X-ray, and which would not be positive enough to base a diagnosis upon alone; and unless a shadow were discovered by the X-ray, we would not be justified in diagnosing them as cases of tuberculosis. I have never seen a case where suspicious physical signs were accompanied by a slight haze, shown by the X-ray, in which the subsequent history of the patient did not prove the correctness of the original diagnosis. I do not recognize the term 'pretuberculous.'"—J. Edward Stubbert.

Incipient.

"Slight localized lesion, with or without bacilli, and but little constitutional disturbance (fever, loss of weight, etc.)."—H. P. Loomis.

"Symptoms with or without early physical signs of limited extent in one or both lungs; with or without bacilli in the sputum; with or without slight constitutional debility or complications."—E. R. Baldwin.

"Cases in which both the physical and rational signs point to but slight local and constitutional involvement."—E. L. Trudeau.

"Involvement of apex low as the first interspace; a few râles, feeble respiratory murmur, and moderately harsh expiratory sounds."—E. Fletcher Ingals.

"Physical signs and rational symptoms are both slight; tubercle bacilli are present, and evidence of toxic infection small."—I. H. Hance.

Same as Trudeau.—F. I. Knight.

"A stage in which symptomatology and physical signs point to tuberculosis without mixed infection."—R. H. Babcock.

"Very slight signs in one or both apices; exceptionally in one spot elsewhere; little or no fever, and general symptoms are not those showing that the disease has taken any general hold upon the patient."—V. Y. Bowditch.

"Slight local, with little or no constitutional involvement."—Laurason Brown.

"Slight localized involvement of the lung, with or without constitutional disturbances."—J. Edward Stubbert.

Moderately Advanced.

"Lesion involving one lobe of one or both lungs, and in which there may be excavation; constitutional disturbances, anorexia, and loss of weight present."—H. P. Loomis.

"Symptoms are more or less marked with extensive signs in one or both lungs, beginning or actual cavitation, with or without constitutional debility or complications."—E. R. Baldwin.

"Cases in which the localized disease process is either extensive or in an advanced stage, or where, with a comparatively slight amount of pulmonary involvement, the rational signs point to grave constitutional impairment or to some complication."—E. L. Trudeau.

"Involvement as low as third rib, or a corresponding amount in another portion of the lung."—E. Fletcher Ingals.

"All rational symptoms present in severe form; evidences of a very active disease present over varying areas; may have small areas of disease with very severe rational symptoms, or the lesions and rational symptoms may both be very great."—I. H. Hance.

Same as Trudeau.—F. I. Knight.

"Stage in which there is mixed infection with signs of softening, but not any considerable destruction of lung tissue."—R. H. Babcock.

"Well-marked symptoms of a catarrhal condition of the lungs, with evidences of decided consolidation, or still less of cavity formation."—V. Y. Bowditch.

"Localized disease process extensive or in an advanced stage, or slight local pulmonic invasion, with rather marked constitutional involvement, or with complications."—Laurason Brown.

"More general consolidation of the lung with more marked constitutional disturbances and beginning of softening, or a single cavity without very marked constitutional disturbances, and with a small area of lung involvement."—J. Edward Stubbert.

Far Advanced.

"Extensive involvement of the pulmonary tissue, generally more than one lobe in each lung. Marked constitutional debility, and often complications are present."—H. P. Loomis.

"Symptoms of long standing with extensive signs with or without large cavities; marked constitutional debility and complications."—E. R. Baldwin.

"Cases in which both the rational and physical signs warrant the term."—E. L. Trudeau.

"Involvement as low as the fifth rib, or lower, with cavities."—E. Fletcher Ingals.

"All rational symptoms of severest type present; destructive process and progressively increasing areas of disease present in lung; complicating tuberculous diseases in other organs."—I. H. Hance.

Same as Trudeau.—F. I. Knight.

"Well-marked cachexia with or without extensive caseation and excavation."—R. H. Babcock.

No definition.—Laurason Brown.

"Consolidation, cavity formation, and symptoms of general infection are present."—V. Y. Bowditch.

"Extensive area of involvement with soften-

ing and excavation, and with marked constitutional disturbances."—J. Edward Stubbert.

Improved.

"Local lesion becoming quiescent, and constitutional symptoms decreasing."—H. P. Loomis.

"Lessened symptoms or signs; improvement local or general, or both."—E. R. Baldwin.

No definition.—E. L. Trudeau.

"Diminution of cough and expectoration, increased flesh, greatly diminished râles, and nearly normal temperature."—E. Fletcher Ingals.

"Some bettering of rational symptoms, with little or no progress of pulmonary lesions."—I. H. Hance.

No definition.—F. I. Knight.

"Vague and relative term. Would involve a lessening of all symptoms, and a gain in weight, without signs of extension of disease."—R. H. Babcock.

"General symptoms, cough and expectoration have diminished, with increase of strength, and possibly of weight, there being of course, different grades of improvement as slight or marked."—V. Y. Bowditch.

"Physical signs showing process less active, or general health improved, with symptoms relieved or abated."—Laurason Brown.

"An improved case is one in which the constitutional disturbances are removed, and signs of activity in the lung are reduced; the temperature is normal, or nearly so, and the patient able to return home and do a fair amount of work without exacerbation of existing symptoms."—J. Edward Stubbert.

Arrested.

"Lesion fibroid, with the physical signs of this condition; constitutional symptoms absent; bacilli present."—H. P. Loomis.

"Three months without fever or other symptoms of disease progression; partial or complete recovery of general health, without loss of expectoration or baccili."—E. R. Baldwin.

"Cough, expectoration and bacilli still present, but in which all constitutional disturbances have disappeared for several months, the physical signs being interpreted as indicative of a retrogressive or arrested process."—E. L. Trudeau.

"Absence of cough and expectoration; general good health; absence of all râles and marked diminution of dulness, with cessation of much of the bronchovesicular breathing formerly present."—E. Fletcher Ingals.

"Rational symptoms have almost wholly disappeared, and physical signs show no further activity in pulmonary lesions; bacilli still present."—I. H. Hance.

"Absence of all constitutional symptoms, pulmonary conditions being stationary, and therefore no longer active. Such an improvement must have existed for many months, or even years."—R. H. Babcock.

"All cases in which cough and expectoration have ceased, and where the general condition would indicate outwardly a return to health, regardless of the fact as to the exact condition of the chest itself, even though in many cases, so far as the physical signs themselves were concerned, the term 'cured' might possibly be justified. On account of the treacherous nature of the disease, am unwilling to use the term 'cured' until after the lapse of two or three years, possibly, when no return of the symptoms had been manifest."—V. Y. Bowditch.

"No activity in process in lungs, with absence of fever and other constitutional symptoms for at least two months."—Laurason Brown.

"Cases which have previously shown marked constitutional disturbance, but in which all constitutional disturbance has disappeared for several months. Physical signs interpreted as indicative of arrested process."—F. I. Knight.

"An arrested case is one in which all signs of activity and all constitutional disturbances have been absent for at least two months. Bacilli may or may not be present."—J. Edward Stubbert.

Apparently Cured.

"Absence of bacilli. The local changes recognized only those of complete fibrosis; no constitutional symptoms."—H. P. Loomis.

"Three months without any symptoms of disease progression; complete recovery of general health, and absence of bacilli or expectoration during whole period."—E. R. Baldwin.

"Cases in which rational signs and bacilli have been absent for at least three months, or who have no expectoration; any abnormal physical signs remaining being interpreted as indicative of a healed lesion."—E. L. Trudeau.

"Absence of all symptoms of disease, and disappearance of nearly all signs for a period of two years."—E. Fletcher Ingals.

"All rational symptoms have disappeared, and physical signs show no evidence, or but slight evidence, of scar tissue remaining. No bacilli."—I. H. Hance.

Same as Trudeau, except time limit should be one year instead of three months.—F. I. Knight.

"After lapse of two or three years, during which time no symptoms had been manifest."—V. Y. Bowditch.

"Practically synonymous with arrested. If lung were fibrous and tubercles calcareous, condition would certainly be cured. It is possible for old cheesy areas to be incapsulated and thus produce no local or general symptoms, yet the patient could not be said to be cured; it would constitute a relative cure."—R. H. Babcock.

"Abnormal physical signs absent or slight, indicative of healed lesion; absence, for at least three months, of constitutional symptoms, and of bacilli in sputum."—Laurason Brown.

"One in which the above conditions have existed for six months."—J. Edward Stubbert.

Cured.

"Absence of bacilli; no evidence of any localized pulmonary process (even fibroid) changes. Lungs normal."—H. P. Loomis.

"Two years without relapse. Not in favor of word."—E. R. Baldwin.

"Same as apparently cured."—E. F. Ingals.

No definition.—Hance, Brown, Trudeau, Knight.

"Synonymous with apparently cured."—R. H. Babcock.

"Only after a lapse of two or three years. I do not use term, but include all such cases under head of 'arrested.'"—V. Y. Bowditch.

"Those in which all constitutional signs of disease have been absent for two years and in which, for some length of time bacilli have not been found; and in which the physical signs are such as can be justly attributed to scar tissue, or are totally absent. Expectoration may or may not be present."—J. Edward Stubbert.

DISCUSSION.

Dr. Bowditch: As to the use of the term "pretuberculous stage," I must confess that I dislike it almost as much as that much-abused term "heart-failure." It seems to me that a case must either be tuberculous or it is not. I acknowledge that the gentlemen who recognize that condition are men whose opinions are entitled to great weight, but I cannot agree with them. As to the term "arrested," I think I stand alone, perhaps, in not using the terms "cured" or "apparently cured" when the patients are discharged from my care even when the general condition and physical signs would seem to warrant the latter terms. There will always be differences of opinion on this question, but I have seen so many cases discharged as "cured" or "apparently cured," and yet the day afterward, possibly, a hemorrhage or even death occurred, that I have adhered to the more conservative term thus far in my nomenclature. I was somewhat vague in my reply to Dr. Stubbert as to the length of time after which I was willing to consider the case cured. I am willing, however, to accept the time stated by Ingals and Baldwin; say, perhaps, two years.

Dr. Edson: Not being Germans we are deprived of the advantages of long words to explain our meaning. It seems to me the term pretuberculous or prebacillary stage is a good one. So much depends on the secondary infections, *et al.*, that the stage in which the tuberculous process is slight, one without any breaking-down in the covering as it were of the inflammatory area, as compared with that in which the breaking-down has occurred, and until which period we do not get the sputum, is one that may be substituted for the less wieldly one of "no bacilli in the sputum." Those cases, as a rule, have a longer and more manageable course as regards comfort and length of life than those in which general ulceration occurs.

Dr. Quimby: Ever since I began the study of physical diagnosis I have been impressed with the indefiniteness of the terms used. Some years ago, at a meeting of the Section on General Medicine of the New York Academy of Medicine, to test this question of uniformity in the use of physical diagnosis terms, I brought in several patients with well-marked signs, and, after marking a point on each chest where there was a distinctive sound, I asked the gentlemen present to listen at those points and to write down the name which they would give to each sound, folding the paper each time so that the one following could not see what had been written. Some five or six responded and when the lists were read, incredible as it may seem, no two men gave the same name to any one sound. At our meeting in Bethlehem, I read a paper on "Definite Records of Physical Signs," believing that such records can be made; but now we are discussing definitions of things which are indefinable. Our difficulty, and apparently the cause of our controversy, lies in the fact that, having applied names to confessedly mere probabilities or physical prophecies, we act as though the use of those names affirmed the probabilities to be demonstrated facts. We are attempting to affirm future conditions from present symptoms, which is, of course, impossible. Nevertheless, there is a certain something which we wish to talk about, and if we will simply agree among ourselves just what combination of symptoms and physical conditions these several apparently prophetic terms shall be accepted as indicating, we can then discuss these questions intelligently, at least among ourselves, and by sticking to them very likely bring others to accept our definition. I therefore move, Sir, that a committee be appointed to draw up a statement setting forth the combinations of signs and physical conditions which these several terms shall be understood to imply when used by members of this Association.[1]

Dr. Wilson: I want to second Dr. Quimby's motion, and my main object in doing so is that I may say a few words from the standpoint of one who is a general clinician, perhaps in contradistinction to the methods of those more interested in sanitarium work and who feel obliged, by the exigencies of their own every-day work, to use such terms, in order that a set of definitions may be brought into practice which will pass current among all interested in the subject. It seems to me that the whole set of terms we have been speaking of would indicate a want of recognition of the pathological changes which arise under different circumstances in pulmonary tuberculosis. In the first place, we do not recognize the fact that pulmonary tuberculosis is, in the beginning, a local infection, and that it often remains so, especially in cases where recovery takes place. Secondly, that there are cases that live with physical signs that are permanent, and which at no time can be shown to have had the tubercle bacilli in the expectoration. Then there are other cases of fibroid changes, starting perhaps in the pleura and extending to the lung, without giving rise to the presence of bacilli in the sputum, but

[1] The President appointed the following gentlemen as members of a Committee on Nomenclature, to report at the next meeting of the American Climatological Association: Drs. C. E. Quimby, E. R. Baldwin, F. I. Knight, V. Y. Bowditch, and J. Edward Stubbert.

leading to disturbances of the health in a lasting way. We must think, on the other hand, and I am now speaking of the difficulties we must encounter, of the recovery that often takes place which is permanent, but in which the most marked physical signs remain, such as cavities, deformities of the chest, etc. When we consider these things, the question of the presence or absence of physical signs must be considered as militating against the use of such terms as "improved," "arrested," "restoration of health," and the like. I want to say a word in this connection on a subject that has attracted my attention more and more in the last few years, and to which I have learned to attach a great deal of importance, a physical sign that is often the only one of an incipient pulmonary tuberculosis, and that is interrupted respiration. I have recognized this sign over and over again at a time when there was great question as to the patient's health, and at a time when no other sign could be elicited. I have found it in regions of the chest where other signs have appeared later. In the textbooks this sign has been given altogether too little attention. If we entertain the pathological view that pulmonary tuberculosis is an infection, then it is a mistake to make a subdivision such as "prebacillary stage" and "incipient tuberculosis," for every case that shows the physical signs or rational symptoms due to tuberculous infection is a case of tuberculosis from the beginning.

Dr. Minor: While willing to second Dr. Quimby's motion, I am rather pessimistic as to its outcome. Words, as the Frenchman said, are a means of concealing thought, and no two men will ever ascribe the same meaning to the chosen words. The reasons why these misunderstandings will always remain are that the examinations are made by different men and, while all are able, they disagree because of their different mental attitudes. As regards Dr. Stubbert's plan to classify the cases when discharged, that has been tried in Germany and failed; yet, although it seems almost hopeless, it is important to form some kind of a classification for those of us who have to report on the condition of our patients on discharge. I consider that two or three years at least ought to elapse before a case is considered cured, whatever the findings, and until then the case can only be called "arrested." I always put my patients before leaving to the test of taking violent exercise to see whether they will show any temperature. I have also laid considerable stress upon the restoration of the normal or nearly normal chest circumference, and the condition of steady weight, a weight which holds, although it is not necessarily the weight of previous good health.

Dr. Bonney: I have been for several years heartily in accord with the suggestion made by Dr. Wilson with reference to the undesirability of the terms that have been used. Four years ago I read a paper before this Association in which I made some allusion to classification. I am skeptical about the practical utility of the terms that have been suggested, and I think that each writer in reporting his cases should define his position in order that his readers can have a clear understanding of what he means. I have frequently seen cases that might be reported as incipient where the prognosis, I would think, was considerably less favorable than other cases that might be reported by the same man as advanced cases, if we depended alone upon the area or degree of pulmonary involvement.

Dr. Shurly: I am in accord with Dr. Quimby's motion and efforts. There is no use in taking trouble, and "crossing the bridge before we come to it." As long as we have to communicate with one another by language, the more nearly we can get to uniformity in every particular, the more intelligently can we discuss matters. I think this body is the one to make this effort; and though we may not succeed at first, we shall eventually if we keep at it. Some persons may not want to call a certain muscle the sartorius, while the majority of us would continue to know it by that name.

SOME NOTES ON THE PROPHYLACTIC SCREEN IN THE TREATMENT OF TUBERCULOUS CONDITIONS OF THE LARYNX AND PHARYNX.

BY STEPHEN W. WELLS, M.D.,
OF LIBERTY, N. Y.;
RESIDENT HOUSE PHYSICIAN, LOOMIS SANITARIUM, LIBERTY, N. Y.

HAVE you ever paused to consider the risk the laryngologist runs in the daily treatment of a large number of tuberculous throats? Perhaps not, so I take this opportunity to bring to your notice a screen designed to protect the face of the operator from all discharges from the throat of the patient under treatment. Many persons may have excellent control over the larynx and pharynx, but, notwithstanding this, at the most unexpected moment the patient may gag or cough and thus send out a considerable spray of the secretions from the diseased throat. Its usefulness is especially appreciated in those advanced cases of tuberculous laryngitis in which all muscular control has been lost, and the patient, in the effort to relieve himself, cares but little in which direction he coughs, and so often deposits his sputum outside the receptacle provided. The spraying of the physician by these sufferers might be considered simply disagreable were it not for the fact that we know that tubercle bacilli are present in varying numbers in the small particles of sputum thus thrown out. It was appreciation of this danger of infection to the doctor doing throat work at the Loomis Sanitarium that suggested the idea of the prophylactic screen to Dr. Stubbert, the Physician in Charge.

The screen consists of a sliding iron upright set in a weighted base; at the upper end of the upright is attached a metal frame holding a glass plate, 13" x 15", which can easily be removed and cleaned. The frame is attached to the upright so that when in use the right arm is but

one-third the length of the left arm. This arrangement permits considerable freedom in handling the instruments on the right, while the left hand is passed under the screen, thus easily controlling the laryngoscope.

I have used this screen for several years without the slighest inconvenience, treating daily an average of twenty to twenty-five tuberculous throats in all stages of the disease. I should be loth to do this class of work now without the screen, especially as I know of one case in which tuberculosis was contracted in this manner. To demonstrate further the utility of the screen, a series of experiments were made as follows:

The glass plate was rendered sterile by a thorough scrubbing with green soap and boiling water, after which it was immersed in 95-percent. alcohol, then exposed to the sunlight for a few hours. At the beginning of the throat treatment hour the screen was placed in position to receive the small particles of sputum coughed out or exhaled by the patients during the hour. These particles, some so minute as to be scarcely seen, others nearly as large as a small pea, were allowed to dry, then scraped off and collected in a test tube containing sterile water and allowed to stand until a sediment formed. The sediment was then stained in the usual manner for sputum

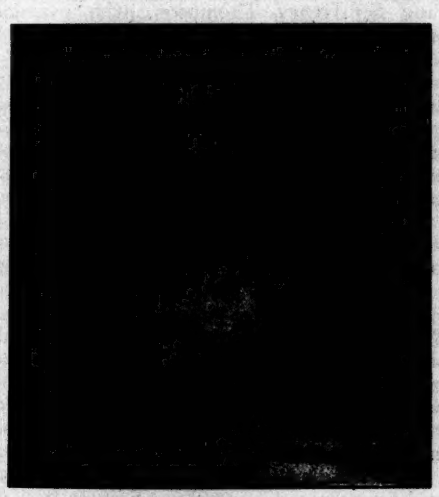

Fig. 1. The prophylactic screen.

and examined microscopically. Tubercle bacilli were found four times in a series of six experiments, varying in number from three to fourteen bacilli in each stained specimen. Several preparations were made from each of the collected scrapings.

From cultures made on glucose agar and grown in an incubator for three days, the following germs were isolated: Staphylococcus pyogenes aureus (most numerous), 1,000; streptococcus pyogenes, 1,000; micrococcus tetrogenus, 800; diplococcus pneumoniæ (A. Fraenkel), 1,000; bacterium pneumoniæ (Friedlander), 800.

It is said that a certain number of germs must find entrance into the tissues before they can overcome the natural cell-resistance of the structure and establish a colony. This number must, of necessity, vary considerably with the difference in resisting power in the individual. There-

Fig. 2. The screen in use.

fore, a man, in the best physical condition, might for years treat tuberculous throats with impunity, all bacilli that he might inhale being promptly destroyed by the vigorous cell-life. But should he be unfortunate enough to contract an acute disease of the bronchi or lungs, or even a chronic condition causing congestion, the presence at such a time of tubercle bacilli might easily be a most important factor in determining the course and character of the disease. To meet this ever-present danger the prophylactic screen was brought forth without the knowledge of an earlier invention in which the screen, instead of being portable and solid, was suspended from the ceiling so as to hang between the physician and patient.

Our prophylactic screen has the advantage of being adjustable to any height; it can be easily placed in position; it does not interfere with the view of the larynx; it relieves the patient to feel that he cannot cough into the physician's face, and it thoroughly protects the physician. As to disadvantages, it has none.

THE PATHOLOGY AND THE ETIOLOGY OF PROSTATIC HYPERTROPHY: SUPRAPUBIC DRAINAGE AND MYOMECTOMY CONSIDERED AS METHODS OF TREATMENT AND CURE.

BY AUGUSTUS CHARLES BERNAYS, A.M., M.D., M.R.C.S. LOND.,
OF ST LOUIS;
PRESIDENT ST. LOUIS ACADEMY OF MEDICINE; CHIEF SURGEON TO THE LUTHERAN HOSPITAL; CONSULTING SURGEON TO THE CITY AND FEMALE HOSPITAL OF ST. LOUIS, ETC.

THE terrible sufferings which are caused by a lasting retention of the urine and the dangers to life which accompany it, as well as their relative frequency in old men, were well known to the physicians of ancient times. Hippocrates mentions this condition and adds that it is incurable. This opinion of Hippocrates was held by physicians for many centuries. Morgagni in his "Epistolæ de sedibus et causis morborum," printed in 1761, was the first to shake this pessimistic

opinion by his researches. He showed that the ischuria and concomitant difficulties of defecation were due to enlargement of the prostate. John Hunter corroborated Morgagni's assertion and devotes one chapter in his "Treatise on the Venereal," London, 1786, to prostatic hypertrophy. He mentions the difficulties of micturition in old men due to enlargement of the prostate and gives some illustrations of specimens. Everard Home in his practical observations on the treatment of the diseases of the prostate gland (London, 1811 and 1818), as well as Desault and Bonet, who were pupils and followers of John Hunter, also corroborates Morgagni's discovery of prostatic hypertrophy and its concomitant evils.

Up to the present time the etiology of prostatic hypertrophy has not been cleared up. A completely satisfactory explanation of the process has not been found. Sir Henry Thompson defined it as an "idioplastic tumor" in his lectures, which I had the great pleasure of hearing. Enlargements of organs during the early and middle life partake largely of an inflammatory nature or are found to be small-cell infiltrations. Knowing that old age somewhat inclines toward or favors the development of tumors, we are not surprised to find that a part of the sexual system may show a non-inflammatory enlargement at a time when this system, in all its other organs and in its functions, is undergoing a retrograde metamorphosis and is being more or less put to rest. However, let us remember that Sir Henry's definition is not explanatory in any sense and leaves the etiology of our subject in the dark.

Reginald Harrison seems to think that the hypertrophy is caused by overexertion or overwork of the organ the function of which he conceives to be that of aiding the bladder in the evacuation of its contents. He thinks that the main purpose of the prostate is to furnish a muscular support "primarily to the bladder and its contents and secondarily to the adjacent parts," and thus seems to regard enlarged prostate as a form of compensatory hypertrophy similar in its etiology to the well-understood hypertrophies of the muscular walls of the heart. Guyon's theory is opposed to this view, he regarding the hypertrophy as due to arteriosclerosis of the urogenital tract.

White agrees with Velpeau that in this disease we have an analogue of the fibromyomatous uterus. Sir Henry Thompson also favors this view, and I also think that the myoma of the prostate is analogous to myoma uteri and I think that it may be referred to developmental or congenital cell-nests which lie dormant in early life and are only incited to late enlargement by the incidents accompanying the functions of the genito-urinary organs in health and in disease.

Thus, we must admit that the etiology of prostatic enlargement is not understood and that the speculations which we have before mentioned are only a little more respectable than those speculations which bring diet, occupation, modes of living, abstinence and indulgence, sexual habits, gout, rheumatism or gonorrhea into direct or indirect etiological relation with the disease.

In most of the diseases in which the etiology is not cleared up the pathology is also incomplete. In the disease under discussion, however, the numerous researches by pathologists and by practical surgeons have almost cleared up the pathological anatomy of, and also added to the knowledge of, the functional disturbances which we observe as the symptoms of prostatic hypertrophy.

Cancer, sarcoma, tuberculosis, and echinococcus are rare diseases of the prostate which produce enlargement of the organ. Adenoma rarely occurs, but the hypertrophy of the prostate under discussion is of very frequent occurrence in the aged. In a study of one hundred men over sixty years of age, and taken consecutively as they came before me in my work in St. Louis, Missouri, I made a rectal examination in each with a view to determine the size and condition of the prostate. Of this number only fifteen complained of symptoms which were undoubtedly due to hypertrophy, but there was noticeable enlargement in thirty-one cases without any functional disturbance. These data, being based on a physical examination of the living patient, are probably not as reliable as the figures of Von Dittel and Sir Henry Thompson, who examined cadavers. The former found 22 per cent. and the latter 34 per cent. of enlarged prostates in cadavers of aged men, the exact ages not being known in all the cases. I have twice found enlargement of the gland, in the form of nodules, in boys; these observations were accidentally made upon two brothers, aged seven and nine years, who had died of diphtheria, and I am of the opinion that these small interstitial myomata will be quite commonly detected if looked for by those who have opportunities of frequently examining the prostate glands of young men and boys upon the dissecting-table.

Prostatic hypertrophy when microscopically examined is found to consist of an increase of the non-striated muscle cells and connective tissue which lie between the tubular glands. These latter are displaced by the hypertrophic muscle fibers, and in extreme cases are nearly absent. All of the fibrillary connective tissue found in enlarged prostate can be seen to originate from the perivascular sheaths.

We are justified in denominating the condition, which we find in most cases as myomatous hypertrophy, or, if the myomà assumes the shape of a tumor, we may speak of a myoma or fibromyoma of the prostate. In rare cases the enlargement depends upon a hyperplasia of the glandular structure, and then we may speak of diffuse or circumscribed adenoma of the prostate. The cases of acute swelling of the prostate partake of an inflammatory or infectious character and do not come under the scope of this investigation, but their existence is undeniable, although I have never witnessed an autopsy on a case of acute prostatitis.

Hypertrophy may be found in a diffuse form,

so that all parts of the organ are affected alike and there is an even enlargement of the whole gland, or tumor-like nodules, sometimes as large as a walnut, may be found in the form of hyperplastic knots of tissue which are plainly visible upon sections made through the organ. The ordinarily cylindrical urethra is changed into a vertical, narrow slit, sometimes one and a half inches long, having the enlarged lateral lobes on each side of the urethra, the sides touching each other in the median line. All parts of the organ may be hypertrophied, but there are certain parts which are favored and most frequently attacked. Mercier was the first to show that the hypertrophy usually begins at or near the isthmus of the gland and that it frequently forms what we call the middle lobe, which projects into the bladder near its neck in the form of a teat. Behind this lobe is the so-called recessus or cul-de-sac, in which the residual urine accumulates. In other cases the lateral lobes or only one of them may become hypertrophic.

The cause of the sufferings of prostatics, as well as the danger to which they are exposed, is the retention of urine which often occurs as a result of the hypertrophy. Hypertrophy of the prostate does not always lead to retention of urine, and it is often the enormously large prostate of unchanged contour which does not produce essential or severe troubles. The more localized hypertrophy affecting only one part upon one side, a symmetrical hypertrophy, as it were, or a small degree of enlargement, may cause severe troubles. This takes place when such parts of the organ are affected by the growth as are in close relation to the lumen of the urethra and project into the canal or neck of the bladder as they increase in volume.

A hypertrophy of the lateral lobes may and often does compress the urethra laterally and change it into a vertical narrow slit. When only one lateral lobe is more enlarged than the other the urethra is laterally displaced and pushed out of the median line.

Mercier proved that the hypertrophied teat-like middle lobe will obstruct the internal orifice of the urethra when the bladder is contracted for the purpose of micturition. He claims that an evacuation can only take place after a greater distention of the bladder by the accumulation of more urine is accomplished. But as soon as a part of the urine is discharged the valve will again become sufficient and prevent complete evacuation.

Thus, the residual urine is accounted for in a simple mechanical way, and we can easily understand the interruption of the stream and the tenesmus or strangury. We can understand the somewhat paradoxical phenomenon of incomplete evacuation while the patient can voluntarily pass urine. I have the conviction that this valve-like action of the middle lobe is only possible when it is very small and thin, but that it acts more like a dam when it is broad and stiff.

There are some cases in which the internal urethral orifice projects into the lumen of the bladder. It looks much like the portion of a virginal uterus when the hypertrophic growth of the prostate has grown upward and backward into the bladder. In a case of this kind the urethral opening will be closed or narrowed and will be projected into the cavity of the bladder as the muscular coats contract. The mechanics of this condition seem to be that the urine contained in the bladder will exercise an even pressure from all sides upon the cervix-like prostate, and the more pressure that is exercised by the muscular wall of the bladder upon its contents the more will the urethra be compressed and the more difficult will be the voiding of the urine. In this form of hypertrophic prostate there will be nothing to hinder the introduction of the catheter.

In old men there is always more or less of a cul-de-sac at the posterior lower part of the bladder, and we can readily see how an enlarged middle lobe must help to increase the size of this excavation. According to Dittel[1] and his assistant, Schustler, middle lobes of the prostate without enlargement of one or both of the lateral lobes is very rare. I have seen but one case of solitary enlargement of the middle lobe. According to my own observation the most usual form of prostatic hypertrophy is the bilateral enlargement of the lateral lobes in a nearly symmetrical form; when one lobe grows more than the other the one will bulge over and cause a depression in the other and the urethra will be compressed or completely closed so that the urine cannot escape. In this condition the mouth of the urethra is not the cause of the retention as much as the two opposite contiguous lateral lobes of the enlarged prostate.

The first bad effect of retention of urine, when not relieved by the catheter, is upon the walls of the bladder in a purely mechanical way by pressure of the mass of urine on the vesical wall. This, of course, causes dilatation of the bladder. The long-continued exertion of the muscular coat in trying to expel the urine will make greater demands on the muscular coat, and the constant efforts to overcome the obstacle will be responded to by a compensatory hypertrophy of the muscular layers of the bladder-wall. The result will be a peculiar netlike concentric hypertrophy of the bladder, which is known as trabecular bladder (vessie en colonne) so often seen at autopsies on patients who had narrow urethral strictures. The intravesical pressure frequently causes diverticulæ and pockets to form by the bulging out of the mucosa between the muscular trabeculæ.

A chronic and extreme retention of urine causes final dilatation of the ureters and of the pelvis of the kidney, and may cause an absorption by pressure of the secreting tissues of the kidney. When the entire urinary system or canal is thus dilated the valvular opening of the ureters which is effected by their oblique entrance into the bladder is overcome. The vesical orifices of the ureters are found widely patulous. The dammed up urine in the bladder, in the ureters and in the pelvis of the kidney form an uninterrupted column

[1] "Contributions to the Knowledge of Prostatic Hypertrophy," Medicin. Jahrbücher, Zeitschrift der K. K. Gesellschaft der Aerzte in Wien, Volume 24, 1867.

of fluid in a single large receptacle which is not divided into sections or divisions by a septum or valve of any kind. It is easily understood how under such circumstances an incipient purulent cystitis rapidly spreads to the pelvis of the kidney and to the kidney substance and will cause a pyelonephrosis.

The prostatic patient is usually first notified of his trouble by a difficulty in voiding urine. This difficulty grows as the hypertrophy increases. Some day retention of urine takes place. Symptoms of irritable bladder, frequent desire to urinate and pain, often very severe, are other concomitants. There may be a backache and tension in the region of the bladder. Even when spontaneous voiding of urine is still possible, the complete evacuation of the bladder may be impaired or interrupted from a want of power in the bladder-wall to contract. A part of the urine decomposes in the cul-de-sac, or in some pockets may become stagnant. Now, if by means of an unclean catheter or by the introduction into the bladder of some of the bacteria that always inhabit the anterior urethra, as was shown by Lustgarten and Mannaberg, the urine be decomposed, a catarrhal cystitis is soon developed. Decomposed urine causes a continual irritation and the cystitis spreads into the deeper layers of the bladder-wall, and in the presence of pyogenic bacteria we soon have a suppurative or gangrenous cystitis.

The greatest danger consists in the upward progress of the infection through the ureters to the kidneys. We often find that the infection spreads rapidly, as there is nothing to interrupt its progress from cystitis to pyelitis and nephropyelitis. Prostatics nearly all die sooner or later of pyelonephritis. The clinical picture is that of pyelonephritis and sepsis, except in some cases in which both kidneys are severely affected. In the latter event the patients die an easy death with uremic symptoms.

Suprapubic Cystotomy as a Method of Drainage in the Treatment of Hypertrophy of the Prostate; Myomectomy as a Radical Cure.—Suprapubic cystotomy is an operation which finds its application in (1) stone in the bladder, (2) tumors and growths, (3) hypertrophy of the prostate, (4) foreign bodies, (5) exploration of the bladder, and (6) drainage of the bladder.

It is a recognized and successful method of treatment in all of these conditions. The technic varies with the object in view. If it is desired to open the bladder merely for the removal of a foreign body the wound may be closed at once. If we desire to establish drainage the bladder must be kept open and a buttonhole may be established by stitching the mucosa to the skin. This fistula may be left open for weeks or months, but can be closed whenever the object of the drainage has been achieved. I will not describe the method of operating, because it is a simple trick devoid of danger in the hands of any experienced surgeon. I regard it as one of the minor surgical procedures and may assume that you will all agree to this proposition. A little reflection will show that the operation is only indicated when the bladder is full or can easily be filled with either air or water. The use of a rectal bag is unnecessary; in short, the operation is one of the simplest and easiest in all surgery. But one landmark is required, and that is the symphysis pubis behind which the bladder is always found and is easily punctured or incised with or without an intravesical guide.

I have to do with the operation to-day only in its relation to drainage as a method of treatment in prostatic hypertrophy and its most troublesome complication, cystitis.

Some ten years ago I got the notion that suprapublic drainage would cure prostatic hypertrophy. I reasoned that by the drain I could give complete physiological and mechanical rest to the bladder and that I could prevent the unrest due to the alternate filling and emptying of the bladder. We all know that Nature does its work of repair rapidly and painlessly if we can only give rest to the diseased organ; this axiom applies to all diseases without exception, including the many forms of infection. What is infection unless it be the unrest produced by microbes and their toxic products upon the tissues? Remove the toxic agents, the cells will be at rest and there will be no inflammation. The best definition of inflammation is the following: Inflammation is the response made by the tissues to toxic agents which invade them. I had often seen the mucosa of the bladder, which had become inflamed and ulcerated, return to its normal condition in a few weeks after a suprapubic section and drainage, and of course I knew that the cystitis accompanying many cases of hypertrophied prostate would disappear under the free drainage and the rest which was given the bladder by this simple operation. There can be no doubt on this point, but I had hoped that the hypertrophied prostate under the influence of rest would undergo absorption and atrophy and that a decrease in size which might be permanent would take place. In this latter hope I was doomed to disappointment.

It is true that in all cases of hypertrophy in which I made free permanent drainage for from three to ten weeks the urine became normal in color, the cystitis was much improved and in some cases entirely cured. It is also true that the enlarged prostate in each case became smaller and that the patients were exceedingly comfortable during the time that the drainage was kept up. One patient, Mr. T., who had a severe cystitis and who suffered extremely from his enlarged prostate, was so much relieved by the suprapubic drainage that his praise of the service rendered him was most grateful to my ears. "Why, just think of it! I sleep all night without getting up, do not have to use the catheter, have no temperature at bedtime and my appetite has returned." This patient died suddenly one morning as the nurse woke him; he raised himself up in bed to greet the nurse and fell over dead. In that case I was permitted to hold an autopsy and found that the prostate was quite large and that there was a large myoma in the left lateral lobe of the prostate and a small one of the size of a filbert in

the right lobe which projected across the median line. It seems clear to me now that no matter how long I might have drained this man's bladder the myomata would probably not have atrophied, and I am reasonably certain that the cystitis would have returned with the closure of the suprapubic drainhole and resumption of the catheter life. I may add that death was due to embolus and that the primary thrombus most likely came from a plugged vesical vein.

In several of my cases I had the great pleasure of seeing the prostatic hypertrophy become much reduced and remain in this condition for over a year, the patients regarding themselves as quite cured and throwing away their catheters. But I am compelled to report to you that with the exception of one man they all, twenty-six in number, were again obliged to take up the catheter life which had been abandoned for from a few weeks to fifteen months.

I am convinced that, as a radical cure of prostatic hypertrophy, suprapubic drainage is a failure. This result or conclusion might have been anticipated by reasoning from the basis of the facts which I brought out in the pathological part of my paper. It was there stated that hypertrophy of the prostate is a form of neoplasm or tumor. It is either a diffuse myomatous hypertrophy or it is a localized formation of nodular myomata, except in rare instances, which were alluded to in the first part of the paper. *Myoma in men or in women cannot be made to disappear by castration, nor can it be made to do so by giving to the parts in which it is located physiological and mechanical rest by means of suprapubic drainage.* I have had no chance to try the effect of castration and drainage simultaneously and hence cannot say what the result of this treatment would be. But there is no doubt that this treatment would be justifiable. The method must be tried. It is highly improper to condemn any rational procedure *a priori*. So long as we claim to be working upon a scientific basis, let us not condemn methods before we have tried them.

The following gives the results of my suprapubic drainage work and the fate of the patients so far as known to me: Cured, 1; leading a catheter life as before drainage, 8; operated on after Bottini and improved, 2; operated on after Bottini and not benefited, 1; operated on after Bottini and died on third day after the cautery of septic pyelonephritis, 1; operated on by perineal prostatectomy, 2 (of these one died of pyelonephritis on the fourth day after operation, the other seems to be cured); now being drained suprapubically for the second time, 1; died of pyelonephritis, senile gangrene or pneumonia, 6; disappeared and condition unknown, 4.

All of those whom I drained suprapubically were eloquent in their praises of the relief afforded to them. The patient who died of embolus was entirely relieved of his usual trouble and suffering by the drainage, and I am not sure that his death ought to count for much against the suprapubic operation. I regard suprapubic drainage as the best method of giving temporary relief to those patients who are not willing or not in condition to undergo prostatectomy. The cystitis can be cured by drainage and will not always return after the drainhole is closed. In conclusion I may say that the most rational procedure is myomectomy and that with our increasing technical experience it offers the best prospects of radically curing the evils which accompany prostatic myomata.

The word prostatectomy would indicate that the whole of the prostate is removed. This has not been the case in most of the operations that have been reported. In those cases in which the whole prostate was removed by way of perineal section, by the suprapubic route or by a combination of both methods, the mortality has been fearful. I am unable to give reliable figures because many of the total prostatectomies have been fatal without being put on record. The fact which stares us in the face in estimating the value of a new operation by statistics is that only the good results are reported and the bad ones buried. Hence statistics based on reports of a few cases by a few men are unreliable and always misleading, because they indicate a mortality which is too low.

The results of partial prostatectomy are much better as regards mortality and also in respect to functional improvement of the diseased organs. Thus, after a partial prostatectomy the mortality is very low and the function of voiding urine is preserved to a degree which is entirely satisfactory. This operation is the one which I have named myomectomy. Prostatic myomectomy is the operation which I think will be adopted very generally in the future for the radical treatment of hypertrophy. The name hypertrophy of the prostate is misleading and I would rather use the term myomatosis of the prostate. I have made sections of many specimens and parts of enlarged prostates and even in the hardest and most resistant tumors have been able to show non-striated muscle cells. I am convinced that the bundles of connective or fibrous tissue which we find in the sections are all derived from the connective tissue which accompanies the blood-vessels. This perivascular connective tissue surrounds the arteries and veins. It is known in biology as the lymph-sheath. All arteries and veins are surrounded by this lymph-sheath, which is continuous with the lymph-spaces around the capillaries. In my own sections I could prove that what fibrillary connective tissue we find is developed from the perivascular sheaths of blood-vessels entering the prostate. The principal enlargement is made up of bundles and nodes of non-striated muscular fibers which cross each other and intermingle with each other exactly as we see them in myomatous uteri. Sometimes the nodules can be easily shelled out of their beds, but oftentimes the process is very tedious and difficult. Morcellement is found to be the best way of extirpating parts of the prostatic lobes. The cases in which we find no well-defined nodules of myomatous nature, but merely an even hypertrophy of the

organ, all parts being equally enlarged, are uncommon. The nodular form is more frequently found. The number of cases I have examined is too small to permit of a more definite statement at the present writing.

In summing up my views on this subject an important and suggestive question arises in regard to the duration of catheter life. Reginald Harrison and Frank Lydston state that the average length of life of a prostatic patient after he has been initiated into the catheter life is four years. Both of these men have had a large experience and I am not inclined to doubt their statement. I know that with extreme care and under the most painstaking cleanliness, both of the person and of the catheters, two men surrounded by the luxuries of wealth have lived nine years and eleven years respectively and are in good physical condition. One of these men has had several attacks of cystitis and has passed through them successfully. The other one was operated on several years ago for a stone in the bladder by litholapaxy. My own experience would lead me to place the average length of catheter life at a longer number of years, but I am not in a position to speak authoritatively on this point. At any rate, catheter life is associated with much danger and an infection may at any time take place and even in spite of good management will often lead to pyelitis, to pyelonephritis and to death.

Knowing the dangers of catheter life and the shortcoming effect it has on the duration of life, we must deliberately decide the question as to its usefulness and we must not recommend it without great hesitation. The time when a prostatic first seeks our aid and assistance is the time when we must decide what to do. The first time a patient has retention is the time when he must either be taught to use the catheter for the purpose of drawing off the residual urine three or more times per day or the surgeon must decide to get rid of the cause of the trouble by some other means. I believe that in the long run much suffering and the unavoidable dangers to life and health which accompany prostatic hypertrophy can be spared to old men if myomectomy be performed in the beginning. The operation, if done early, before the patient's strength and recuperating powers are wasted, will be a safe one accompanied by a low death-rate. The technic of this operation known now as perineal prostatectomy I shall not describe in this paper, but I will say that the procedure has been frequently performed and is highly recommended by Bryson of St. Louis and Ferguson of Chicago. The methods which they have described and the methods of Von Dittel, Alexander, Harrison and others are before us.

My operation which I have called myomectomy does not aim to remove the whole prostate, but merely those parts of it which have impinged upon the vesical end of the urethra and have interfered with the function of the bladder in such a manner as to prevent complete evacuation of its contents. Myomectomy is a perineal partial prostatectomy and its technic is practically the same as that of the perineal prostatectomies which are now before us in recent surgical literature. The important technical point in the operation is that the connection between the mucosa of the bladder and that of the urethra must not be completely interrupted. A broad strip of mucosa should be left which connects the bladder with the urethra.

Conclusions.—In old cases of hypertrophied prostate palliative measures are sometimes preferable to radical measures.

Drainage of the bladder by the suprapubic route is preferable to perineal drainage in cases of cystitis, because the suprapubic method gives the sphincter apparatus more complete rest than the perineal buttonhole or fistula.

In recent cases of hypertrophy, in which the patient's health has not been injured by chronic cystitis or nephropyelitis, the dangers of myomectomy or perineal prostatectomy are minimal and in these cases a radical and satisfactory functional result can be achieved by myomectomy.

Operation must be regarded as a palliative measure intended to enable the patient to evacuate his bladder more completely than before. It will probably have a very limited usefulness and will be crowded out of practice as the technic of myomectomy or perineal prostatectomy is perfected.

Bottini's operation is dangerous and must not be undertaken unless most careful measurements have been made. It is often followed by extravasation of urine into the perineum and perineal section must be done in order to save the patient's life as soon as swelling of the perineum is noticed.

Myomectomy done through a median perineal incision is the operation which promises the best results and is the operation of choice. It is applicable to the greatest number of cases in which permanent cure may be expected, the kidneys being physiologically sufficient and unimpaired. The perineal fistula will always close spontaneously after the perineal drainage is discontinued, and if enough mucosa has been left there will be no stricture.

MEDICAL PROGRESS.

MEDICINE.

Incandescent Electric Light and Infectious Diseases.—Knowledge of the influence of sunlight on bacterial development first suggested investigations concerning the bactericidal power of electric light. Gebhardt and Aufrecht showed that animals infected with anthrax bacilli, pyogenic bacteria, tubercle and diphtheria bacilli and then permanently exposed to incandescent electric light resisted the infection much more successfully than did control animals similarly inoculated and not subjected to the influence of the electric light. It was as first too readily assumed that similar results could be obtained in human beings; Böder, however, showed that the rays of electric light were powerless to control acute or chronic general diseases in human subjects. Later experiments on animals by

Von Drigalsky produced evidence which contradicted that of Gebhardt and Aufrecht. KREBS (Berl. klin. Woch., Jan. 15, 1902) has reopened the question in a series of observations on mice and guinea-pigs. Mice inoculated with bouillon and agar cultures of anthrax failed to derive any benefit from exposure to electric light. Such exposure had no influence either for good or evil on guinea-pigs inoculated intraperitoneally with typhoid bacilli. Krebs concludes that there is no immediate prospect of the successful treatment of more or less acute bacilliary diseases by means of the incandescent electric light.

Diabetes and the Superheated-Air Treatment.—Diabetes mellitus is under all circumstances a most difficult disease to manage and has long since been considered practically incurable. D. WALSH (Med. Press and Circ., Jan. 15, 1902) reports a case which came under his treatment in January, 1901, with sugar in the urine amounting to 2.5 per cent. This patient underwent several courses of Tallerman's superheated-air treatment. As a result the sugar was decreased by April 15th to 0.71 per cent., and in June and July there was hardly a trace. The author makes the suggestion that this method be tried faithfully whenever available with the hope that in certain cases it may prove an active means of aiding the patient.

Bubonic Plague.—Among subhuman animals, the clinical course of the plague is very characteristic in rodents and monkeys. M. D. ZABOLOTNY (Archives des Sciences Biologiques, Vol. VIII., No. 4, 1901) while in India performed some experiments upon monkeys, as these approach so nearly the human species. He found that it was easy to produce in monkeys the two common clinical forms of the plague, the bubonic and the pneumonic, and that even after manifest symptoms of the disease a cure could be brought about by the use of Hafkine's antiplague serum. This cure in the course of plague is accompanied by phagocytosis in the buboes. Preventive injections of small doses of serum are to be preferred to large doses administered late, and immunity is only obtained by repeated small doses. The injection of the toxins and dead cultures of the bacteria was always accompanied by a marked leucocytosis.

Pancreatic Disease.—Diseases of the pancreas are as rare as they are interesting. DR. MURRAY of Cornell (Amer. Med., Jan. 25, 1902) reports three cases which do not, indeed, go very far to clear up the present obscurity of the subject, although they illustrate the possible sources of error in diagnosis. Of these, the most common are cholecystitis, perforation of the gut, and appendicitis. Murray believes that the most important symptoms are the presence of fat and proteids in the stools and of sugar in the urine, especially in the absence of jaundice and of intestinal disease, and the existence of tumor in the epigastric region. He says that whenever one meets with a case of acute epigastric peritonitis in which the etiology is obscure, pancreatitis should be suspected, and if the patient's condition admits of operation an early abdominal exploration should be made. Surgical intervention seems at present to offer the only possible mode of relief for this class of cases, although its exact methods and scope have not, unfortunately, been determined.

Acute Streptococcus Pharyngitis.—In four cases which occurred at one time in his practice, suggesting an epidemic, L. S. SOMERS (Medicine, Jan., 1902) found the same kind of bacteria, the same run of fever and bilious symptoms, and the same rapid disappearance of the membrane and all the symptoms except a feeling of severe exhaustion which depressed the patients for several days. The first thing to do is to determine whether or not the disease is diphtheria; a limited area of membrane formation or even entire absence of membrane does not rule out a Klebs-Loeffler infection. The usual streptococcic angina is very severe, but these cases were mild and closely resembled diphtheria. All the cases gave a history of previous catarrh. In no case did the infection occur twice in the same family or house. In some patients localized areas of epithelial necrosis, or herpetic pharyngitis after the vesicles have ruptured cannot be distinguished by the naked eye from false membrane. This is also slightly true of leucoplasia, mycosis and some of the aspects of syphilis. The small round epithelial plaques sometimes seen in influenza occasionally assume a membranous aspect, but they are limited in extent and do not tend to encroach on neighboring areas.

Nature of Typhoid Fever.—It has been evident for some time that the conceptions of the last thirty years with regard to the nature of typhoid fever would have to be modified. With the perfection of bacteriological methods, it has become more and more frequent to find authentic cases in which the intestinal symptoms, or at autopsy the intestinal lesions, have been subordinate or entirely lacking, while some other organ of the body has constituted the theater of disease. Such cases, with no bowel lesions, have been variously described as pleurotyphoid, pneumotyphoid, arthotyphoid, in brief, as abenteric typhoids. The typhoid lesions of the intestine would seem, therefore, to take their place with those of the other viscera, as merely secondary and local expressions of a general infection. The site of primary invasion still remains to be determined, and it is to this problem that EUGENE WASDIN (Amer. Med., Feb. 8, 1902) has devoted a very suggestive article. He asserts that in every case of typhoid he has been able to identify an area of lung presenting rather peculiar and characteristic signs. "On percussion the resonance is diminished, the note being higher. Auscultation will always give evidence of impaired vesicular breathing, a paresis. With these symptoms there are bronchial breathing, mucous and sibilant râles, and cough." The condition is usually unilateral, the lower lobes being most frequently involved. Expectoration is scanty and may be blood-stained. Pathologically, the condition is a typical hemorrhagic edema, both interstitial and alveolar. The bacteriological examination of the sputum is, unfortunately, not very illuminating. The physical signs are very evidently not those of an ordinary bronchitis, or of hypostatic congestion, and Wasdin regards the pulmonary foci as the primary colonizations of the typhoid germs. Thence they pass into the blood current, giving rise to the multitudinous symptoms characterized as septic or toxic, and with the aid of proper bacteriological precautions they may now be isolated from the blood. Finally, they become localized again in various tissues and organs of the body, either through an especial vulnerability of the affected structures or because the toxins have previously prepared the way for their invasion. Among such "terminal" expressions of the disease are to be reckoned the roseola, the intestinal ulcers, typhoid joints, and so forth. It will be seen that this theory, though apparently revolutionary in character, merely modifies the site of primary invasion, not the nature of the disease itself. It is certainly interesting and suggestive, but it can never find acceptance upon the basis of purely clinical evidence. Bacteriological demonstration must remain the final criterion and the only adequate proof of the primary localization of the disease.

Atonic Dyspepsia.—By atonic dyspepsia is meant the gastric derangement which results primarily from deficient activity on the parts of the muscular coats of the stomach. It is a disease which has received especial

attention from English clinicians, whose views on the subject are very conservatively presented. WM. CARTER (Birm. Med. Rev., Jan., 1902) recognizes two types, namely, atony with stagnation, in which the stomach fails to empty itself within the four to five hours intervening between two successive meals, but becomes empty overnight, and atony with retention, in which the stomach never empties itself. The disease may be secondary to nervous or secretory disorders of the stomach or to pyloric obstruction, in which case its significance is entirely subordinate. When it is the primary disorder, it is traceable etiologically to two groups of causes, namely, those acting directly on the stomach, such as excess in drinking and eating, hurried meals, large drinks between meals, and so on, and, secondly, to those acting indirectly by lowering of the general health and nutrition. With regard to the recognition of motor insufficiency, Carter asserts that Chomel's sign, gastric succussion, is by far the most generally useful. In obtaining it, one should see that the abdominal wall is thoroughly relaxed, and the shock transmitted by the fingers should be suddenly produced and strictly vertical in direction. When positive, it invariably indicates the presence of fluids in the stomach. It may be confirmed by the use of the stomach-tube, and by the salol test of Ewald. The grade of muscular paresis present is, of course, indicated by the length of time after the preceding meal during which succussion is still elicitable. The associated atonic dilatation, or gastroptosis, is revealed by the altered contour of the abdomen, by observation of the area over which succussion may be induced, and, if necessary, by inflation of the stomach. In the treatment of the milder grades, the chief indications in the way of diet are to avoid overdistention. One may either give small meals at shorter intervals than usual, a plan which is advisable when the appetite is poor, or one may give carefully selected but substantial meals at longer intervals than usual. With regard to the character of the food the two most important rules are: (1) Reduction of fluid taken with food to a minimum; and (2) the selection of a mixed diet, consisting of compact nutritious food. Fermentable foods are to be avoided. Drinks are to be taken when the stomach is empty, as on arising, or at bedtime. The most useful drug is strychnine; the best aperient, aloes or cascara. In atony with retention, it is best to put the patient to bed for a week or so. The dietary indications are those already outlined. In most cases, lavage of the stomach is essential for really good results and should be practised in the morning. Warm water, containing a dram of boric acid and from 15 to 20 grains of salicylic acid to the pint is the best medium. Bismuth, sulphocarbolate of soda, and resorcin may also be used.

Cure of Consumption.—The late British Congress on Tuberculosis has been most fruitful in important recommendations for treating the disease. B. H. STEEDE (Med. Press and Circ., Jan. 8, 1902) discusses the value of sanatoria for the isolation and treatment of these patients. These institutions have already proven their value beyond dispute. They are a great help, partly by the cures certainly effected, partly by the isolation for the time of the cases, and finally and chiefly by the knowledge they spread of the nature of the disease, of the measures necessary to avoid infection. There are, however, patients who are not suitable for treatment in sanatoria and the care of these is most important. By their circumstances and their habits they spread the infection more than all others. They should therefore be lodged in special institutions and their houses disinfected. Homes for the incurable consumptive poor are the most pressing necessity. In considering the mortality of tuberculosis the need of such institutions has, of course, been felt ever since the infectious nature of the disease was established. Latterly the practicability of these institutions has been considered. Dr. Ring, of the State Government of Michigan, a delegate to the Congress on Tuberculosis, read a paper as to the family history of 242 cases. He thinks that parents with consumption tend to confer immunity rather than predisposition to consumption in their children. The public are generally convinced, however, that the disease is hereditary. The point is by no means settled and the chances are all on the negative side of the question. What the public must now believe is that it is a disease which is liable to attack successive inmates of the same house rather than successive members of the same family unless they are all living together. Coates of Manchester has recently carried out similar investigations with these conclusions as to the dust taken from three classes of houses. He found tubercle bacilli in the dust of dirty houses inhabited by consumptives who took no care whatever with regard to the disposal of sputum, etc.; he found the tubercle bacilli in the dust from houses which were apparently clean and well kept, but which were inhabited by consumptives who took no proper precautions; he found no tubercle bacilli in the dust from very dirty houses which were known not to have been inhabited by consumptives for several years. In France an institution has been founded called the Antituberculous Dispensary. It has been established for several years and endeavors to give the best possible medical service in the homes of all tuberculous patients whose necessary cessation from work would condemn them to utter distress. The consumptive poor must receive help in some form or other from the community. This dispensary systematizes, directs and increases the help given by private or public benevolence; sees that the danger from infection is minimized; provides good food and gives aid as far as the funds allow; and improves the surroundings of the patient so as to benefit him and protect his friends.

Serumtherapy in Acute Rheumatism.—In a case of acute articular rheumatism involving the wrists, elbows, knees and ankles and characterized by chills and a very irregular temperature, suggesting a pyemic condition, R. J. CHIPMAN (Med. Rec., Feb. 1, 1902) used salicylates, opiates and local fomentations without benefit, the patient's condition after two weeks becoming very serious. The chills were followed by high temperatures, 104° to 105° F., and profuse sweats. The cardiac action became rapid and weak. Three injections of ten cubic centimeters of the antistreptococcic serum were made and both the general and local symptoms rapidly improved, although the patient seemed previously to be in a dying condition.

Cause of Dengue.—Since the mosquito has been found to be the medium by which malaria and yellow fever are transmitted from one patient to another, this little insect has been suspected of being instrumental in propagating several other diseases. In the study of dengue in Beyrouth, Syria, H. GRAHAM (Med. Rec., Feb. 8, 1902) found that if the patient sick with the disease was kept in a room free from mosquitoes there was no danger of communicating the disease to others. Literature shows that for many years certain miasmatic influences were thought to be required for the propagation of the disease. In the further investigation of the etiology of dengue, experiments in inoculation were made and when persons were exposed to the bites of mosquitoes that had previously bitten dengue victims, these persons in time developed typical attacks of the disease in from four to six days. Furthermore, infected mosquitoes were taken to a mountain town where dengue seldom appeared and two healthy boys exposed

themselves to their bites. One developed an attack of the malady in four days and the other in six days. The blood of various patients was then closely studied and more positive proof of the cause of the disease discovered. A plasmodium similar to that of malaria, but differing from it in many essential characteristics, was found in over 100 cases. This plasmodium had a much slower development than that of malaria, so that fresh specimens would not last long enough to trace the development very far. They grow within the red blood-cells, at times sending out pseudopodia and on the fifth or sixth day the corpuscle is broken up and the plasmodium seems to degenerate. No pigment is formed within the protozoon at any time. In several cases presenting severe second or third attacks flagella were seen in the blood showing a distinct undulatory movement by which they progress, some of them having clubbed ends. Although the cycle development has not yet been followed through the mosquito there seems to be little doubt but what dengue also will be proven to be communicated only by this insect.

Yellow Fever and the Mosquito.—The theory, recently promulgated and based upon work done in Havana, that the mosquito plays as important a rôle in yellow fever as in malaria is strongly opposed by J. P. OLIVER (Texas Med. Jour., Jan., 1902), who finds that the evidence that the disease is introduced into towns by goods or merchandise packed in boxes or trunks, or by persons in whom the disease is incubating and develops after arrival, is so overwhelming that it is not necessary to draw in the mosquito as intermediary host. Accepting the mosquito theory, it is hard to understand where the insect gets its poison with which to inoculate its first case and to explain those cases cited in which a strict quarantine was maintained and no yellow fever appeared until this quarantine was broken, despite the fact that the mosquito was abundantly present and had free access to those afflicted. Examples are also cited in which sickness could be directly traced to certain infected articles, and these facts render the mosquito theory altogether untenable.

Echinococcus Disease in North America.—A very interesting review of over 200 cases of echinococcus disease observed in this country is given by I. P. LYON (Virg. Med. Semimonthly, Jan. 10, 1902). He finds that 74 per cent. of all the cases occur in young and middle-aged adults and that under ten years the disease is a rarity, in spite of the fact that young children are apparently most exposed to the infection. The disease is also rare after the age of sixty. The proportion of males to females is 3 to 2. Forty per cent. of the cases were Icelanders living chiefly in Manitoba; Germany shows 15 per cent., Italy 14 and Great Britain 9 per cent., while those of native birth also amounted to 9 per cent. The relative immunity of Americans is seen even among the American-born children of the Icelandic immigrants. The disease prevails chiefly in the lower classes, particularly among the ignorant and slovenly. The State of New York furnishes one-quarter, Canada one-third of all reported cases, and it is noticeable that few are found in the Western States, where it would seem that conditions favorable for the spread of the disease exist. The liver was found involved in 73.7 per cent. of the cases; next to this organ the order of frequency is as follows: Omentum and mesentery, lungs, spleen, kidney and bladder. Some unusual localities were found, such as hernial sac, nasal septum, pericardium, head of humerus, brain, eye, prostate, testicle, pancreas and pleura. In only four cases was the multilocular type noted. The diagnosis seems to have been based upon the gross appearance, the site and the presence of daughter cysts. The important question, if the disease is increasing, cannot be answered authoritatively at present, since the statistics are of too recent years. Statistics of animals show great variations, but it is quite likely that the disease is not evenly distributed and that endemic foci exist. Concerning prophylaxis it may be said that the disease can be exterminated by enforcing proper sanitary regulations at the slaughter-houses and by guarding against too intimate intercourse between dog and man.

Turbid Urine in Eclampsia.—In two cases of eclampsia and one of uremia, all three ending fatally, H. CRAMER (Münch. med. Woch., Jan. 21, 1902) found a peculiar milky urine voided, suggestive of chyluria. The close chemical and microscopical examination, however, showed that the milkiness was due to innumerable suspended particles, albuminous in nature. Since in all three cases very much albumin was present on boiling, it is possible that the strange phenomenon was due to a supersaturation with albumin, especially since the urine cleared up upon sufficient addition of water. It is also possible that the suspended albumin is of a different nature than the dissolved albumin. From a prognostic point it seems that death is not far off when the emulsion is voided.

A New Theory of Diphtheria.—A good deal of difficulty has always been experienced in sharply differentiating true and pseudodiphtheria bacilli on a morphological basis, and F. SCHANZ (Münch. med. Woch., Jan. 14, 1902) is of the opinion that their only difference lies in their power to produce toxins. It has been found, however, that the blood of most people contains a certain amount of antitoxin which may result from a previous diphtheria, but may also come from the harboring of a virulent diphtheria bacillus, which strangely does not lack in antitoxin-producing properties, on the mucous membranes of the nose or other organs. The degree of severity of a diphtheria may thus depend on the amount of unconscious immunization which has constantly been going on from a virulent bacillus.

THERAPEUTIC HINTS.

Rheumatismal Pleurisy in Children.—

℞ Sodii salicylat..... 3.0 (gr. xlv)
Syrupi .....30.0 (℥i)
Aquæ .....75.0 (℥iiss).

A tablespoonful every two hours for a child of six years. Gram 0.50 (gr. viii) of salicylate should be given each day for each year of age.—COMB in Le Progrès Médical, Jan. 18, 1902.

Adulteration of Drugs.—After examining numerous samples, L. F. KEBLER (Amer. Jour. of Pharmacy, Jan., 1902) reports as follows: Acetamide, which keeps better, is often sold for ammonium acetate; precipitated calcium phosphate contains up to 30 per cent. of calcium carbonate; chromic acid may contain 60 per cent. of acid sodium sulphate; powdered podophyllum may be sold for podophyllin; vanillin may contain up to 90 per cent. of benzoic acid, or 50 per cent. of acetanilid; oil of cassia is adulterated with kerosene; the oils of peppermint and thyme with oil of turpentine; balsam of copaiba with gurjun balsam; aconite root with tormentilla; extract of lettuce is substituted for lactucarium; inferior aloes for the official article; inferior gums for acacia and tragacanth. Gross adulterations are very little practised at present, detection requiring the use of test-tube, analytical balance, microscope or polariscope.

The Eye in Variola.—Almost any eye condition may complicate smallpox, but practically the only one that is likely to lead to blindness is a pustule or abscess of the cornea. M. DUFOUR (Revue Médicale de la Suisse Romande) has had great success in treat-

ing such a condition by the subconjunctival injection of a 1-2,000 solution of mercuric bichloride, repeated at three day intervals. Hypopyon disappears, the opalescence of the cornea clears away, and the site of the abscess tends to cicitrization.

Arsenic in Tuberculosis.—This drug is especially advantageous in the early stages of tuberculosis, and in the chloro-anemic forms common in young women. Preference is given to its employment hypodermatically, a solution of 5-10 centigrams to the cubic centimeter being administered once daily. By mouth it may be given in concentrated solution, containing 1 centigram to 5 drops:

Cacodylate of soda.....	0.40	(gr. vij)
Distilled water	10.00	(ʒ iiss)

Or in pill form:

Cacodylate of soda.....	0.025	(gr. ⅓)
Extract of gentian.....	10.000	(ʒ iiss)

For one pill.

It may also be administered by rectum:

Cacodylate of soda.....	0.40	(gr. vij)
Distilled water	200.00	(ʒ vj)

Inject 5 c.c. in rectum twice daily.

The treatment should be intermittent, however administered; generally hypodermic injections are given once daily for eight days, and suspended for eight days; or injections may be given two or three times weekly.—Jour. d. Méd. d. Paris, Jan. 12, 1902.

Pessaries versus Operations.—The general practitioner too often tells his patients that a major operation is necessary for some displacement. When a woman has been told that she needs an operation, she rarely rests easy until it has been performed. The measures required to hold the uterus in its normal position are as follows: Hygienic regulation of food, dress and evacuations, massage for stimulation of the parts and relief of congestion; local and general treatment for the reduction of congestion and inflammation; the use of pessaries, or operation. Tenderness from inflammation, adhesions, cicatricial bands, the weight of a large tumor or relaxed pelvic floor may contraindicate the use of a pessary. Therefore the pessary, as a rule, can only be used when the displaced organs are replaceable or can be made so, and when the pessary is efficient in holding them in place and can be worn without discomfort. The use of the pessary depends on the rule that if the cervix is normally placed, the body of the uterus will take care of itself. A suitable pessary should allow the patient to ride, jump, dance and carry on the marital relation. When the displacement is due to inflammation this must be reduced by local treatment before the pessary is adjusted. If the inflammation is due to the displacement, the pessary may relieve all the trouble. While a pessary is worn the patient should use cleansing douches of a quart or two of hot water daily, and every month or two should be cared for by the physician. Repair of lacerations of cervix and perineum may aid. Round ligament operations are often of only temporary benefit. Ventral fixation may cause as much discomfort as the displacement has caused intestinal obstruction, and may interfere with pregnancy reaching full term.—G. W. KAAN in Annals of Gynecology and Pediatry, Dec., 1901.

Puerperal Septicemia.—It is common to see patients, writes F. A. HIGGINS (Annals of Gynecology and Pediatry, Dec., 1901) with symptoms of impending septicemia following abortion, with a temperature of 103° to 105° F., pulse 120 to 130, uterine tenderness and foul discharge, who after complete curettage with antiseptic douching and regular régime, return to normal conditions in from one to three days. Such cases have not reached the stage of general septicemia and the infection is removed by local treatment. Of 38 cases of profound septicemia at the Boston City Hospital, 11 followed abortion and 27 followed labor. Sixteen died. The most important complications were septic pneumonia, endocarditis, mania, phlegmasia dolens and purpura. Antistreptococcus serum was administered to five patients, only one of whom recovered. The serum seemed to have a very depressant effect. Fresh lacerations of the cervix were very common among the infected women and the writer believes these the avenues for germ entrance. There is no routine treatment, but if the uterus remains large and soft, if there are retained products, and if there is a profuse foul uterine discharge, curettage will remove the focus of the disease and promote involution. If there are no retained products and the uterus is firmly contracted, curettage is useless. Following curettage weak antiseptic intra-uterine douches of bichloride, normal saline solution, or formalin, one-half to one per cent., have given good results.

Acute Bronchitis.—

℞ Tinct. scillæ.....	0.7	(ɱx)
Syr. codeinæ.....	20.0	(ʒv)
Extract. hyoscyami.....	0.05	(gr. i)
Aq. aurantii florum.....	10.0	(ʒiiss)
Julep 120.0		(ʒiv)

Dose: One dessertspoonful.—G. Lyon in Le Progrès Médical, Jan. 11, 1902.

Non-diphtheritic Membranous Angina.—GAUCHEZ recommends the local application of

℞ Camphoræ 20.0		(ʒv)
Ol. ricini.....15.0		(ʒiv)
Alcohol 10.0		(ʒiiss)
Ac. carbol. cryst.....	5.0	(gr. lxxv)
Ac. tartarici.....	1.0	(gr. xv).

Dropsy.—In general dropsy from heart or kidney disease, SHOEMAKER considers the following valuable:

℞ Potass. bitart.....	15.5	(ʒss)
Extr. convallariæ fl.....	6.0	(ʒiss)
Syr. simplicis, q.s. ad.....120.0		(ʒiv)

Indigestion.—A good preparation in chronic hepatic derangements, especially of malarial origin, and for sick headache depending on indigestion is as follows:

℞ Ext. iridis fl.,		
Ext. hydrastis fl., aa.....15.0		(ʒss)
Elix. aromat.....30.		(ʒi)

Dose: A dessertspoonful in hot water before meals.

Respiratory Failure from Anesthetics.—First remove any possible obstruction to the breathing, open lips by finger or mouth-gag, and get lower jaw forward till the lower teeth are in front of the upper. It is a common mistake for the beginner not to place his fingers really behind the angle of the jaw, but on the lower surface, so that pressure does not push the jaw forward. Keep the tongue forward and make sure that it is not caught in the teeth. If necessary catch the tongue and pull it well forward, but do not keep forceps tight on the tongue for any length of time, as they will injure it. If the tongue has to be kept forward, better pass a ligature through it instead of using forceps. Rubbing the lips briskly with a towel or the application of ammonia to the nostrils is often sufficient to reestablish breathing. If the corneal reflex is present give more anesthetic; if absent, give more air. If the obstruction to breathing seems due to mucus, the pharynx should be cleared out with a sponge on a holder and the anesthetic changed to chloroform or the A. C. E. mixture. In an extremity, rhythmic traction of the tongue may be effective. If these means are of no avail, artificial respiration must be promptly resorted to. The one drug that may be given is strychnine hypodermatically.—PROBIN-WILLIAMS in "Administration of Anesthetics."

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THE SMALLPOX VERSUS DR. PFEIFFER.

A SMALLPOX case destined to be famous in the history of the progressive victory of therapeutic science over the ranks of ignorance, prejudice, quackery, and sentimentalism, is that of Immanuel Pfeiffer, M.D., of Boston and of Bedford, Massachusetts. This physician was certainly one of the most vigorous and intelligent of the anti-vaccinationists, yet he was very certain, in his own mind, that smallpox is not a contagious disease, but that it is rather the product of bad hygiene and evil diathesis. This belief in the mind of a medical man properly ratable as of average intelligence is in itself a striking illustration of a wise and ancient proverb—"There are none so blind as those who won't see"; and at the same time it is a notable index of the status of the "antis" in general—"agin the gov'ment," whatever its complexion, dissatisfied with the actual order of events, with "things as they are."

Dr. Pfeiffer has been for many years emphatic in his denunciation of vaccination. He deemed it always an injury and never a benefit, but he denounced it especially because he considered compulsory vaccination a violation of the rights of the individual, however strikingly oblivious such "rights" may be of the undoubted rights of others, far more numerous, in their demand to be protected by the State from all preventable disease.

Dr. Pfeiffer, to his honor be it said, had the courage of his convictions on this subject, and in this respect at least he differed from the great majority of his cult. During a recent antivaccinational hearing before a committee of the Massachusetts Legislature he undoubtedly determined to prove that to a person in vigorous health, as he himself then was, smallpox is not a contagious disease. This fact he hoped to demonstrate and he chose the means best adapted certainly to make his expected demonstration publicly emphatic. To obtain permission from the Boston Board of Health to visit the numerous patients in the city's smallpox hospital on Gallop's Island was for him, as for other physicians, a comparatively easy matter, and Dr. Samuel H. Durgin, Chairman of the Board, showed at once his wisdom and his scientific foresight by allowing Dr. Pfeiffer to make this visit unvaccinated, although of course against the rules. Criticized for this exception in the light of the event, Dr. Durgin has ably defended himself on the one principle which is valid always and everywhere, the principle of Utilitarianism, of the greatest good to the greatest number. Rather than be vaccinated, Dr. Pfeiffer unquestionably would have stayed away, and an experiment of great practical value to the world would have been missed. But, to indicate an example of the questionable and often deceitful means in the employ of the antivaccinationists, let us rehearse the reasons given by the Doctor for desiring permission to make this visit, remembering that at the very time he was publicly urging the non-contagiousness of this disease, but with adequate evidence lacking. To the Chairman of the Board of Health he wrote:

"Referring to our conversation of recent date, and your request to my representative that I write you a letter asking for permission to visit the smallpox hospital at Gallop's Island, for the purpose of scientifically looking into the disease in all its various forms, and with close observation be able to get such facts, which will enable a physician to diagnose smallpox cases with as much certainty as possible, and also to get the facts in regard to the most successful treatment, I would say that I have already considerable experience, gathered in Europe, and am anxious to increase my knowledge."

On this representation the permission was readily granted, and on January 23d, well escorted by officials of the Board, he visited the Hospital. He thoroughly examined the institution, and went to the bedsides of many of the patients, and he took all the precautions which other visitors take to avoid infection (such as the

wearing of a close-bound gown and cap, washing the hands, beard, hair, etc., on leaving), save that of vaccination.

For the next ten days, more or less unknown to himself, he was watched and attended by physicians from the Board of Health in order that the public might be protected from infection from his anticipated disease. During these ten days he was at his office and in the antivaccination hearings as was his wont. But on February 3d, ten days after his visit to the Hospital, when the officer called at his professional office on Washington Street, Dr. Pfeiffer was not to be found, nor did he appear at the State House hearing. In answer to inquiries his assistant stated that he was "out of the State" and he volunteered the information that he had seen the Doctor in Philadelphia on the previous day; one of Dr. Pfeiffer's clerks said that she had received a letter from him on January 27th having on it the New York City postmark. The presumption certainly was to any one unfamiliar with antivaccinational methods that Dr. Pfeiffer had been and still was "out of the State." Naturally enough, the Board of Health suspected him to be much nearer home than New York and they even feared that he might be coming down with smallpox. Soon it became known that he had been seen about Charlestown, a part of Boston, but at his office it was denied. This denial was made by a woman clerk in Dr. Pfeiffer's office, yet within an hour thereafter this same woman, accompanied by a doctor, descended a back stairway to a narrow alley, and so reached a side street and a closed carriage that was there in waiting. This carriage, it was learned, conveyed its occupants to the office of a physician on Chambers Street; and there the positive information of the Health Board ended. This physician has since, it is understood, denied that he had any such patient. This was on Thursday, February 6th.

On the following Saturday, fifteen days after the visit to Gallop's Island, the Boston Board of Health received notice from a physician that Dr. Pfeiffer was ill at his home in Bedford with what was probably smallpox, and asking expert diagnosis, the case having been reported by Dr. Pfeiffer's son to the Selectmen of that town. Experts went at once to Bedford and found Dr. Pfeiffer suffering from a very bad attack of the disease. The patient's wife stated that he had arrived home on Thursday night in a carriage saying he thought he had the grip, but his son said that the Doctor had come home on Friday night directly from New York. The patient himself was too ill to make explanations and to set right this strange and unaccountable discrepancy as regards his movements.

This is an outline of this interesting series of events up to this date. Had Dr. Pfeiffer employed all his energy in advocating skilfully, instead of opposing, vaccination, he could have had influence only insignificant in comparison with that which his grave plight has had and will have upon the public. Nothing instructs the average man, especially in masses, so easily and so effectually as an object-lesson, and here is a demonstration arranged to instruct as a medical lecturer sets up an apparatus in the amphitheater. As a prominent Health Board official said to the writer, "This is a case in a hundred years for the cause of the prevention of smallpox." That the people of Boston have benefited from this lesson is already seen in the difference in the welcome accorded the 150 vaccinating physicians now at work in the West End of Boston. But the influence of the dangerous experiment made by Dr. Pfeiffer will, it is hoped, extend wherever its lesson is needed.

The latest news from the bedside of this for once useful antivaccinationist is that he may recover, although he is suffering from the confluent type of the disease. All hope that such will be the case. In the event that his wretched malady leaves him alive, we may perhaps expect from him one of three things—either that he will deny that his disease was smallpox, or that he will relinquish his public opposition to a world of demonstrated medical wisdom; or that he will admit that smallpox *is* contagious and that the public therefore needs protection from its awful ravages by any and every feasible means.

MEDICAL RECONCILIATION.

THE recent appointment by the Medical Council of the New York State Medical Association of a committee to meet the committee of conference selected by the president of the Medical Society of the State of New York at its annual meeting in January forms the next step in the process of reconciliation of the two organizations which at present divide the allegiance of New York's regular physicians. There are now ten men, all of whom are known to have the best interests of the medical profession of this State at heart, on whose shoulders rests the responsibility for the bringing about of reconciliation.

We have already pointed out how much influence and dignity the medical men of this State lose by disunion and how eminently desirable from motives of professional and public welfare reunion would prove. There is no doubt that at least 95 per cent. of the profession in this State agree with these sentiments and we must conclude that we are on the eve of reconciliation.

The recent meeting in Albany showed how much interest the practitioners of this State generally take in the old Society that has so long been representative of their best interests. Here in New York City we realize how much the State Medical Association has gained in numbers and influence in recent years. Things have come to a pass where union is possible without loss of dignity or exercise of condescension on either side. We realize that there are many difficulties yet to be overcome. Most of these are purely personal and must be put aside to make way for professional welfare. Many technical difficulties can be raised if the members of the committees of conference approach the matter in merely formal manner. The committees must understand that the eyes not alone of the profession of this State, but of most of the medical men of the country, are watching the results of the conference and the methods that may be employed to further or hinder harmony. No member of these committees will be deemed worthy of such honors as may be in the gift of the medical profession itself if they now betray the interests of medical organization by insisting too much on merely personal or partisan grounds on inadequate reasons for keeping the Society and Association apart.

No better time for reunion than the present could be found. The annual meeting at Saratoga of the American Medical Association should find a united medical profession from New York State to greet the visitors from other States. If this can be accomplished, and there seems no good reason why it should not be, since all are agreed as to its desirability, we venture to say that this year's meeting of the National Association will be one of the most notable events in its history.

The return of the Medical Society of the State of New York to the fold from which it has been absent not entirely through its own fault would be the initiation beyond doubt of an era of even greater dignity and influence than before for the American Medical Association. Everything possible should be done to bring it about.

REMUNERATION IN THE PRESIDENT'S CASE.

WE are led to believe that the question of remuneration for the surgical and medical attendants of our late President is at present pending in Congress. That it is a national duty to pay the bills in the case is clear. The President while engaged in his duties was stricken down by one who aimed not at him personally, but in some blind way at government through him. It would be eminently wrong therefore to think of the services rendered to the late President McKinley as in any way personal.

Our national reputation is on trial before the world as regards our appreciation of the life of our chief magistrate in hours of danger. On the action of Congress depends what other nations shall think of us in an affair of national importance.

Republics are said to be ungrateful and not without reason, since it is the almost invariable lesson of history that services rendered by citizens to republican governments were never properly rewarded. Many other things were said of republics that have been belied by our own great republic. It remains for us to see that the blot of republican ingratitude shall no longer hold good and our legislators are in the presence of an occasion for the exercise of such generosity as will stamp our governmental dealings with citizens with the ineffaceable mark of appropriateness.

There are many good reasons why the surgeons in charge of the late President's case should be compensated with the utmost liberality. The responsibility assumed was extremely weighty. The unfortunate termination of the case does not lessen the moral responsibility of the national government to provide due compensation for this. If the autopsy had revealed that any mistake had been made the professional reputations of those in immediate charge would probably have been ruined forever. The surgeons in attendance literally staked their future careers upon the exercise of their judgment and professional skill under the distressing and inconvenient circumstances in which they were placed. The surgeons in attendance on President Garfield were treated with scant courtesy and miserly consideration unbefitting a great nation. If it were not inconsonant with true patriotism great surgeons would have felt the necessity for refusing to have anything to do with cases of national importance thereafter. The old disgrace must be wiped out. The opportunity to do

so is in the hands of the committee of the national legislature that has in charge the question of compensation of the President's physicians. Let us hope that this great occasion will not be neglected.

HUMAN AND BOVINE TUBERCULOSIS.

IN the midst of the excitement aroused by Koch's declaration last August as to the absolute distinction between these two types of disease, human and bovine tuberculosis, it was a little lost sight of that the medical world owed the first real scientific work on this subject to an American, Dr. Theobald Smith. Dr. Smith's paper in the discussion that was opened by Dr. Janeway at the first December meeting of the New York Academy of Medicine represents the contribution of an original worker in the bacteriology of the subject. We are glad to be able to present to our readers the full text of the papers of Dr. Smith and Dr. Janeway. They are illuminative, informing documents on an important and at the present moment very practically interesting subject.

Dr. Smith insists on the fact that what we need in the present difference of opinion is not more theorizing and asseveration, but careful observation and patient investigation. As our knowledge of bacteriology advances nothing becomes clearer than that we cannot argue from the susceptibility of one animal to a bacillus to the susceptibility of other animals, even though they may bear certain resemblances to the first kind. No *a priori* rules will guide us as to the animal species that are liable to be affected by any given bacillus. There is, for instance, a bacillus not unlike the bacillus of fowl cholera that produces a choleraic disease in geese. Surprisingly enough, however, it does not produce the symptoms of fowl cholera in fowls other than geese and it proves to be pathogenic for rabbits. There is a micro-organism that causes an epizootic among buffaloes yet fails to affect any ordinary cattle. The size of an animal has little or nothing to do with its specific immunity to certain bacilli. Bovine tubercle bacilli are very virulent for many kinds of animals. They even prove rapidly fatal to swine, yet they fail to affect mice.

With regard to bovine, human and avian tuberculosis, more experimental work is needed before conclusions of value can be reached. There is some evidence of the transfer of bovine bacilli to human beings. In certain cases bacilli having the characteristics of bovine tubercle bacilli have been isolated from human tissues. Curiously enough, one of the most suspicious cases of this kind was reported by an experimenter working under Prof. Koch's direction, though Koch himself in his discussion of the subject makes no mention of it. It seems clear, then, that the flooding of the human digestive tract with bovine tubercle bacilli, especially in delicate early life, may be a source of serious danger. Careful precautions should be taken against any such possibility. In the present state of uncertainty this is the only safe course despite Prof. Koch's almost positive assurance of absence of danger.

Dr. Smith is of the opinion that the only way in which the vexed question of bovine tubercle bacilli being pathogenic for man can be decided is to find bacilli having the positive characteristics of bovine tubercle bacilli in the lesions of human tuberculosis. Inoculation experiments have many uncertainties. This mode of entrance into the tissues does not seem to favor the growth of bacilli that have grown accustomed to the cellular environment of a different animal species. Some preparation other than the sudden introduction into the tissues seems necessary to ensure bacillary growth. Some preliminary modification in the introduced bacilli is needed to fit them for their new surroundings. The problem is one that lies at the very base of many as yet obscure biological principles, but the outlook for its solution is hopeful in the midst of the widespread interest that has been aroused.

In the meantime the warning note uttered by so acute and conservative a clinical observer as Dr. Jacobi at the same meeting must be dominant for medical harmony in practice. The dangers from inoculation with bovine tuberculosis are too serious, if true, to be neglected because their existence is doubted by the laboratory workers. The prevention of tuberculosis in cattle and the constant inspection of the sources of our cities' milk supply is no mere agricultural question, as has been stated, but must certainly be considered a very serious necessity for human sanitation. While we may not go so far as to be frightened by the English statistics of the frequent occurrence of primary intestinal tuberculosis, there seems no good reason to doubt that sometimes there is direct tuberculous inoculation through the digestive tract. It is much better to be sure than to be sorry and none of our present elaborate system of milk inspection, in so far as it is effective, should be relaxed in the slightest degree until we have more positive knowledge with regard

to the innocuousness of infected milk. In this matter our careful scientific observers here in America have furnished us with data that enable us to draw conclusions as to our own conditions without the need of consulting foreign opinions or statistics. Our only justifiable course is to follow the practical conclusions of our own trustworthy workers.

ECHOES AND NEWS.

NEW YORK.

Positions at Pathological Institute.—Civil-service examinations will be held in New York City, March 15, 1902, for the following positions in the reorganized Pathological Institute: Associate in chemistry ($1,800); associate in clinical psychiatry ($1,200); chief associate in neuropathology ($1,800). Dr. Meyer has appointed Dr. P. H. Levene at the head of the chemical department and Dr. Harlow Brooks as associate in bacteriology.

Consulting Ophthalmologist to City Hospital.—Dr. Joseph H. Andrews has been appointed consulting ophthalmologist to the City Hospital. Dr. Andrews has served on the staff for fifteen years, faithfully and well, and the new commissioner, Mr. Folks, shows his sense of the fitness of things in making this appointment.

Work of the Montefiore Home.—The Montefiore Home, which comprises a hospital for chronic invalids and a country sanitarium for consumptives, has just made public the work done during the seventeenth year of its existence. The two institutions have provided for 280 men and 143 women. Of these 339 were inmates of the homes at the end of the fiscal year. The number of pay patients during the year was fifteen. The whole number of patients treated during the year was 737. The officers of the society at present are Jacob H. Schiff, President; L. G. Bloomingdale, Treasurer, and Raphael Ettinger, Honorary Secretary.

Gov. Odell and the State Hospitals Bill.—According to the Evening Post, at the conclusion of last week's hearing at Albany on the State Hospitals Bill, Gov. Odell announced that he would sign it. "I have no desire," said he, "to break down any system. I believe this bill is right, and I am going to approve of it because I believe it is right. There is nothing for those interested in charitable work to fear from this bill, as it is for the betterment of the system of administering the hospitals." The Governor showed considerable feeling towards his critics, and had a sharp colloquy with George F. Canfield, President of the State Charities Aid Association, the principal speaker against the bill. He accused the organization with which Mr. Canfield is affiliated of having been responsible for stirring up the opposition to the measure, and said that there had been great extravagance and mismanagement under the present system. He proposed, under the bill, to get rid of certain persons who had been responsible for some of this extravagance, but had thus far been able to retain office.

Reconciliation in New York Medical Affairs.—The following is a copy of the resolution appointing the committee on conference: *Whereas*, The Medical Society of the State of New York, having appointed a committee to confer with a similar committee from the New York State Medical Association, with the view to a union of the two organizations, and notice of such creation of a committee having been officially given to our President, together with the request that a corresponding committee be appointed by us; *Therefore*, Be it resolved that this Council (the executive board of the Association) appoint for the purpose of the conference in question a committee of five, consisting of Dr. E. Eliot Harris as chairman, and Drs. William H. Biggam, Emil Mayer, Parker Syms, and Frederick Holme Wiggin, to which committee the President is added as a member *ex-officio*.

Alumni of Mt. Sinai Hospital.—The regular annual dinner and reunion of the Association of the Alumni of Mt. Sinai Hospital was held at the "Arena," 39 West 31st street, New York City, February 14, 1902, Dr. E. J. Ware presiding. Among those who delivered addresses were Mr. Isaac Wallach, the President of Mt. Sinai Hospital, Drs. Abraham Jacobi, Arpad G. Gerster, Emil Gruening, Alfred Meyer, B. Sachs and Mr. Louis Wiley, of the New York Times. The following officers were unanimously elected for the ensuing year: Samuel M. Brickner, M.D., President; Albert A. Berg, M.D., Vice-President; Charles Goodman, M.D., Secretary; Martin W. Ware, M.D., Treasurer.

Honor to Dr. Metcalfe.—The New York Sun had the following tribute to pay to Dr. Metcalfe in a recent issue: "John T. Metcalfe, who died at Thomasville in Georgia a week ago Thursday, was scarcely known by this generation, yet in his own he had been one of the most eminent of physicians. Born in 1818 in Natchez, he was graduated at West Point in 1838 and served in the army for two years, mostly in Florida, and then resigned to study medicine. His degree was gained at the University of Pennsylvania in 1843, and then two years in Edinburgh and Paris completed the preparation for his life's work. Not many men can step to the front at the outset of their career and for forty years hold their place against all comers; but Dr. Metcalfe did, and that, too, in spite of a frame at no time robust. As a general practitioner of medicine he wielded an influence in this community more widely felt by his contemporaries, lay and professional alike, than that exercised by any of his associates. As a clinical teacher he might be said to have had no rival, so that in the many years he gave to that absorbing work he left the imprint of his learning and of the surety of his insight on many of the later leaders in his calling throughout the country.

"Dr. Metcalfe's most noticeable characteristics of mind were probably his extraordinary quickness of perception, his readiness in analysis, his strong memory and his sound judgment. They made him the best clinical investigator of disease of his day, as well as the happiest in finding the remedy. He was the very personification of the complete physician. And with friends he was much more. Sydney Smith said no better things than many original with Dr. Metcalfe. His wit—it was always spontaneous—was a delight of which all were glad to partake. If any one could bring a dying man to smile, and that without irreverence or loss of dignity, Dr. Metcalfe was that one. His example remains to his profession, and to his friends the best thing the dead can leave the living—the memory of a most gentle, charming and well-filled life."

American Laryngological Society.—A meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society will be held at the New York Academy of Medicine, Saturday, March 1st. The following program has been arranged: Address of the Chairman, by H. Holbrook Curtis, New York; An Unusual Case of Nasopharyngeal Adenoids, by Carl E. Munger, Waterbury, Conn.; Unique Case of Postnasal Polypi in a Child, with Specimen, by Geo. L.

Richards, Fall River, Mass.; Report of Four Cases of Polypi Attached to Upper Wall of Maxillary Antrum, Protruding into Nose and Rhinopharynx, by Robert C. Myles, New York; Report of a Case of Temporosphenoidal Abscess, with Presentation of Patient, by James F. McKernon, New York; Peritonsillar Abscess, by Frederick C. Cobb, Boston; Two Cases of Hemorrhage, by W. H. Haskin, New York; Septum Operations under Cocaine and Nitrous Oxide Gas, by B. S. Booth, Troy, N. Y.; Acute Suppurative Otitis Media: Its Etiology, Symptoms and Treatment. Discussion by Wendell C. Phillips, Edward B. Dench, James F. McKernon, New York; The Removal of the Stapes for the Relief of Auditory Vertigo, by Eugene A. Crockett, Boston; Chorea of the Larynx—Report of a Case, by James F. McCaw, Watertown, N. Y.; The Treatment of Tonsillar Mycosis, by Chas. W. Richardson, Washington, D. C.; Epithelioma of the Auricle and Auditory Canal; Operation; Exhibition of Patient, by Thos. R. Pooley, New York; Rhinitis Rheumatica, by W. Freudenthal, New York; Chronic Hypertrophic Rhinitis; Its Treatment, by Z. L. Leonard, New York; Persisting Temperature after Mastoid Operations; Analysis of 100 Cases, by Thomas J. Harris, New York; Deviation of the Nasal Septum: Why Our Corrective Operations Often Fail, by Chevalier Jackson, Pittsburg, Pa.; Operative Treatment of Tracheal Stenosis, Following Intubation for Diphtheria; Exhibition of Three Cases, by Arthur B. Duel, New York; Report of a Case of Empyema of Antrum of Highmore, with Interesting Complications, by H. N. Hoople, Brooklyn; Extrinsic Nasal Neoplasms, by John C. Lester, Brooklyn; Empyema of the Frontal Sinus, by Conrad Berens, Philadelphia; General Consideration of Hyperplasia of the Lingual Tonsil, by Seymour Oppenheimer, New York. The profession are cordially invited to be present.

PHILADELPHIA.

The Philadelphia Neurological Society.—A stated meeting of the Philadelphia Neurological Society will be held on Tuesday, February 25, 1902, at 8.15 p.m. Dr. Adolf Meyer, Director of the Pathological Institute for the New York State Hospitals, will, by invitation, deliver an address entitled "Conditions for Psychiatric Research." Members of the profession are cordially invited to attend. After the address a reception will be tendered Dr. Meyer at the University Club.

Dr. Leidy Honored by French Government.—Dr. Joseph Leidy, Jr., has been honored by the French Government with the insignia of Officier D'Instruction Publique. This decoration was awarded for services rendered during the Paris Exposition of 1900, Dr. Leidy representing the United States upon the International Jury of Hygiene and also being a delegate to the Congress of Hygiene and Dermography.

House Quarantine Likely to be Ended.—The committee of five physicians recently appointed by the Director of Public Safety to consider methods of combating smallpox have recommended, provided certain precautions are taken, the abolition of house quarantine. Guards for maintaining quarantine are now costing the city about $20,000 monthly. The report of the committee is as follows: "As soon as the smallpox patient falls ill he should be isolated. While he is in the house strict quarantine should be enforced. Removal to the Municipal Hospital, however, is advised in all cases. After removal to this institution, prompt measures must be taken to disinfect the premises which he has occupied. Every occupant of the house in which the case has occurred should be vaccinated and if necessary, revaccinated, unless satisfactory evidence of recent successful vaccination, can be shown. When vaccination is refused by such occupants, quarantine should be enforced for a period of eighteen days. The premises should be visited daily by a medical inspector, acting under the instruction of the Board of Health." The Homeopathic County Medical Society opposes the abolition of quarantine.

The Relation Between Chickenpox and Smallpox.—At the Pediatric Society, February 11th, Dr. Jay F. Schamberg read a paper on this subject and reported a small epidemic of chickenpox at the Municipal Hospital. Evidence was given to show that the two diseases were entirely distinct and not gradations of the same affection, as stated by some of the older writers. The epidemic occurred in November, 1900, when 33 persons recovering from smallpox had an attack of chickenpox. The latter disease did not appear until the lesions of smallpox had crusted or disappeared, generally from the twentieth to the thirty-fifth day of the disease. There seemed to be no relation between the two diseases except the strong resemblance in some cases.

University Medical Laboratories to be Begun at Once.—The new medical laboratories of the University of Pennsylvania are soon to be started, although only half of the $600,000 to be expended in their construction and equipment has been raised. The building will be 340 by 245 feet in size and two stories in height. Besides two amphitheaters with a seating capacity of 400 each and smaller demonstration rooms and laboratories, the whole front portion of the building will be occupied by small rooms for special medical work and research. The rooms will be so arranged as to secure the greatest amount of northern exposure.

Physician the Victim of an Incompetent Jury.—After deliberating for nineteen hours the jury in the suit of Mrs. Nugent against Dr. H. M. Righter to recover $5,000 for the death of her six-year-old son brought in a verdict of $1,000 in favor of the plaintiff February 16th. The trial occupied nearly a week, the suit being brought by Mrs. Nugent against Dr. Righter on the ground that the boy died of impetigo contagiosa which resulted from a vaccination by the defendant who, it was alleged, used virus not hermetically sealed. It was further claimed that the physician deceived the plaintiff by telling her the boy had diphtheria. In spite of the defense proving that the impetigo did not develop until twenty-eight days after vaccination and being upheld in his diagnosis of diphtheria and its treatment with antitoxin by a consultant, the verdict, as named was rendered. The case will be appealed. A physician who testified for the plaintiff that the method of vaccination used was not a proper one has so aroused the indignation of the profession that it is stated that he will be expelled from the County Medical Society.

Jefferson Hospital Plans Completed.—Final steps toward the building of a new hospital for the Jefferson Medical College have been taken and work will be begun in a few weeks. The hospital will front on Tenth Street and when completed the present building will be demolished to make room for a maternity hospital and nurses' home. The new hospital will be seven stories in height. The out-patient department on the Sansom Street side of the first floor will be separated from the general hospital by a solid wall. The general wards will be on the second, third, and fourth floors, and there will be two private operating-rooms on each floor. Sun parlors will communicate with each ward. On the fourth floor will be a gymnasium with appliances for Swedish movements and the treatment of deformities by exercise. On the fifth and sixth floors will be the private rooms, kitchens, etc. A roof garden

for convalescent patients will cover the entire main building. The J. M. Da Costa Clinical Laboratory will be incorporated with the building. The new hospital will have beds for 250 patients—more than double the number now accommodated in the old building.

CHICAGO.

Chicago Academy of Medicine.—At its annual meeting, February 14, 1902, Drs. W. L. Baum, W. A. Evans, J. G. Kiernan, H. N. Moyer, and E. S. Talbot were elected directors. Dr. W. L. Baum was elected president and Dr. J. G. Kiernan secretary, and the latter hereby becomes secretary and treasurer of the Academy.

Growth of Alexian Hospital.—A report showing the scope of work being done by the Alexian Brothers at their hospital has just been issued. The statistics for the year 1901 show a material increase in the number of patients as compared with the record of 1898, the year the hospital opened. During 1901 the number nursed was 2,709, exclusive of those who applied for treatment at the sanitarium. Of the 2,709 inmates during 1901, but 1,421 paid the full price of treatment; 381 paid a small portion of the cost and 907 were charity patients. City ambulances took 504 persons to the hospital during the year, practically all of whom had been injured in accidents. The hospital is still considerably in debt, and the Brothers in charge will work arduously during the year to secure a material reduction of the amount of indebtedness.

Illinois General Hospital for the Insane.—With the arrival and installation of a hundred inmates from the Illinois Central Hospital for the Insane at Jacksonville, the asylum for the incurably insane at Bartonville was formally opened for the reception of patients February 10th. From now on the State Commissioners of Public Charities will cause to be transferred from the State Insane Hospitals at Jacksonville, Elgin, Kankakee, Anna, and Watertown, with the consent and concurrence of the Superintendents and Trustees of these institutions, such number of incurable patients as the new institution can accommodate. The next installment of transfers will be made later, when 200 patients will be sent from Kankakee and Elgin, one hundred from each place. This institution was built for the care of insane persons for whom there is no hope of recovery. These were so numerous at the State hospitals for the insane that it was believed by the officials that their presence was a hindrance to the successful work on the curable patients. For that reason it was decided to separate them. The capacity of the new institution, while fitted with employees' quarters, domestic buildings, heating and electric plants and storage buildings sufficient to accommodate two thousand patients, is at present limited to about seven hundred, since the cottage and dormitory room will accommodate only this number. Until more ground is acquired the present facilities will not allow for the care of more than that number, and the next General Assembly is depended upon to see that provision is made for more cottages. Meantime, the structure commonly known as the employees' building will be utilized exclusively for the care of patients.

Smallpox.—Three-fourths of all the reported cases of smallpox in the United States are in the territory surrounding and tributary to Chicago and in a population of only about one-third the total population of the country. The data for this statement are found in the current number of United States Public Health Reports, in a tabulation of smallpox in the United States as reported to the Surgeon-General, U.S.M.H.S., December 28, 1901, to January 31, 1902. The cases so reported number 11,167, of which 8,147, or 73 per cent., are in Chicago territory. During the corresponding period last year the proportion was almost exactly reversed—30 per cent. in Chicago territory and 70 per cent. in the rest of the territory. Obviously, the Health Department began its campaign against smallpox none too soon, and the wisdom of its course in appealing to the railway companies as the interest most directly concerned, from a financial standpoint, and as the most effective working agency, is already demonstrated. They have taken hold of the work in a thoroughly business-like fashion, and it is not too much to expect that the epidemic will be practically under control within the next three weeks. There will be no occasion for insuring against smallpox, as is being done in England, if the principles of the vaccination creed be faithfully carried into effect. Great immunity of Chicago from the disease still continues. During the last week 28 suspect cases were examined by the medical inspectors, but only 4 were found to be genuine cases.

Amphitheater at Mercy Hospital Dedicated.—The new clinical amphitheater at Mercy Hospital, one of the finest in the West, was dedicated Wednesday evening, February 12th, in conjunction with a regular meeting of the Chicago Medical Society. Representatives of the Northwestern University Medical School took a leading part in the dedicatory exercises. Dr. Robert D. Shepard, who has been closely associated with the work of Mercy Hospital as well as that of Northwestern University, spoke of the history of the two institutions, telling how, though the University and the Hospital are controlled by different managements and have been for a number of years, they have coöperated in medical and surgical work. In the unavoidable absence of his father, Dr. Nathan Smith Davis, Sr., Dr. N. S. Davis, Jr., acted as a substitute for him. He said the Mercy Hospital was founded in 1849, there being no hospital in Chicago prior to that time. In order to found the hospital, Dr. N. S. Davis, Sr., delivered a course of public lectures in Chicago, by means of which a small sum of money was raised; twelve beds were purchased, and a free hospital was opened in an old building across Rush Street bridge on the North Side. The Sisters of Mercy took charge of the institution thus founded late in the following winter. From those few beds and from the small assemblage of medical men and of patients has grown the present institution, situated now on the corner of Twenty-sixth Street and Calumet Avenue.

Medical Education.—The address of the evening was delivered by Dr. John B. Deaver of Philadelphia, who selected for his subject "Medical Education." The course of study in a medical school should be well balanced and proportionate, and this aim should be kept in mind. The time given is too short to fit a man to become a specialist, but is only sufficient for a groundwork that will permit him to follow his bent, either in post-graduate schools, or in that larger and greater school of personal experience—the daily routine of practice. Even a rapid review of the curricula of the various medical schools will show that in most this balance is not maintained. Some devote too much time to laboratory methods, some to surgery and anatomy, and in others the preference is given to internal medicine. This unevenness is usually due to the domination of one branch of the faculty over the others, and suggests the remedy of each department asking for only the necessary time for the ground-work principles of their branch, and not that necessary for the instruction of future specialists. A college course should be practical. For instance, in some medical schools nearly as much time is given to instruction in chemistry as is given to anatomy, and yet the graduate is hardly able to examine a specimen of urine for albumin with certainty and despatch. Clinical and didactic teaching each have their place. Were it possible, the ideal

method would be a presentation clinically, in a logical order, of all the varieties and stages of disease, but this is manifestly impossible, and didactic teaching must always fill up the gaps left by clinical teaching and be useful in reducing the lessons learned clinically to a systematic and rememberable classification. Thus both kinds of teaching have their place; but there is little doubt that a lesson learned at the bedside or operating-table is more real and applicable to the student than a lesson learned from a didactic lecture. A spirit of commercialism is one of the greatest enemies of a medical school. A large production at a cheap rate may be a good enough aim for a business house, but this spirit is fatal to a medical school. Too many schools seem to take pride in their large enrolment of students, forgetting that at the same time the teachers and clinical material are entirely inadequate for the proper instruction of so large a body of men. Nothing is of greater importance to the body politic than the proper instruction of those who are to have the care of the health of the community on their shoulders. There is not, and never has been, a higher calling than that of the teacher, and a teacher of medicine is one of the highest in this calling. The dignity of the calling is seriously debased by its being occupied by men who, in order to obtain even a respectable livelihood, must make their high position subservient to their practice. Dr. Deaver then considered those principles that are the rock upon which the enduring edifice of medical education must be reared. They are three—anatomy, physiology and pathology. With a thorough practical working knowledge of this triumvirate, all knowledge of medicine is possible of attainment. Where is the surgeon who does not, each day of his life, call to his aid his knowledge of anatomy and pathology, or the physician who is not constantly in need of a knowledge of physiology and pathology in making the simplest diagnosis or in performing the simplest operation of surgery?

Tribute to Dr. N. S. Davis.—Among the pioneers of those who have done most for the advancement of medical education stands the name of one of the members of the Chicago profession. He referred to Dr. N. S. Davis, who as long ago as 1839 began a series of articles asking for improvement in medical schools. Almost the first in the field, his conscientious and able efforts were finally crystallized into the American Medical Association. Thus it is seen from its very inception the primary object of this great bond of unity between the most widely separated members of the American profession was the advancement of medical education. That its purpose has been productive of valuable results there can be no question, and Dr. Davis has been able to see results worthy of the greatest congratulation in the advancement of the medical schools of the country.

Peroration.—Kingsley in "Westward Ho" drew attention to the fact that the tide of immigration was ever toward the west, and it would seem that medicine is following in the track of the westward tendency in the United States. It was not many years ago when the East held the palm of medical education; but today we of the East must bow to the progress of our Western brothers, whose achievements speak so loudly and who, with no uncertain voice or faltering hand, have taken a place in the front ranks of medical attainment, and have raised the banner of Esculapius to the virgin winds of the great West.

A Case of Carcinoma of the Head of the Pancreas.—At a meeting of the Chicago Pathological Society, held February 10th, Dr. Frank Billings presented this case. The patient was a man, fifty-three years of age, a German, a leather worker by trade, who was admitted to the Presbyterian Hospital on October 21, 1901. His family history was negative and he had not been sick until the present illness began five months before his admission. He then noticed slight dizziness and weakness on rising in the morning and in a few days his physician told him that his eyes were yellow. A general jaundice followed, gradually increasing until his whole body was intensely discolored. The jaundice was associated with a sleepy feeling and with much itching of the skin. He lost gradually in weight and in five months before his admission weighed 33 pounds less than at the beginning of his illness. His bowels were usually loose with large stools. He had no pain, chills, fever or sweats at any time. There was no nausea or vomiting. Examination on admission showed an emaciated jaundiced patient with sclerosed arteries. Negative findings in lungs and heart; liver dulness beginning at the fifth interspace in the mammary line and extending three finger-breadths below the costal border. The left lobe of the liver appeared larger than the right and was nodular and somewhat tender to the touch. The abdominal muscles were so rigid that it was impossible to tell the condition of the gall-bladder. The spleen was not palpable. The urine contained a great deal of bile pigment but no other abnormal ingredient at any time. At no time was sugar found. While in the hospital the patient usually had a slow full pulse, subnormal or normal temperature and normal respirations. His appetite was poor, he was sleepy and drowsy much of the time and indifferent as to the final outcome of his disease. Blood examination showed 2,640,000 reds; 8,700 whites; and 58 per cent. of hemoglobin. The blood-corpuscles and plasmodia were yellow-stained. The time of coagulation of the blood was twelve minutes (Wright's method). The bowels moved two or three times each day and the total fecal excretion was large for each twenty-four hours. During the stay in the hospital the patient had no nausea, vomiting, pains, chills, fever or sweat. He died December 20, 1901. The autopsy made by Professor Hektoen, December 21st, revealed carcinoma of the head of the pancreas, biliary obstruction, dilatation of the gall-bladder and hepatic ducts, with general jaundice, biliary cirrhosis, cystic dilatation of pancreatic ducts, secondary carcinoma of the liver and of the peripancreatic and inguinal glands, chronic gastro-enteritis, chronic ulcerative colitis, chronic nephritis, chronic pulmonary tuberculosis, adhesive pleuritis, sclerosis of the aorta, epithelioma of esophagus, and Meckel's diverticulum.

CANADA.

Obituary.—Dr. J. A. Fife of Peterboro, Ont., died on the morning of February 12th. Deceased had been a practitioner of that town for many years and was a native of the county, having been born there in 1838. He was graduated from the Toronto School of Medicine and from Victoria University, Toronto, after which he took a post-graduate course at Bellevue, New York. During the American Civil War he served for two years in the Northern navy.

Value of Vaccination Proven.—Since May, 1901, there have been in the Montreal Civic Hospital two hundred and forty cases of smallpox, not one of these patients having been vaccinated before being brought to the hospital. The efficacy of vaccination as a preventive of smallpox is effectively illustrated by the fact that for months a staff of doctors and nurses, eighteen in number, have been in almost hourly attendance upon these patients, but not one of them has contracted the disease.

Medical Inspection of Schools in Montreal.—At the last regular meeting of the Medico-Chirurgical Society of Montreal the question of the medical inspection of schools was under discussion. Papers were con-

tributed on the subject by Dr. Ruttan, Dr. Tait McKenzie, Director of Physical Training, McGill University, and Dr. Charles H. Church. Dr. Ruttan's paper dealt generally with the whole matter; Dr. McKenzie's paper referred particularly to the deformities among school children resulting from defective seats and desks, while Dr. Church's paper dealt with observations taken from the schools of Montreal, particularly referring to sanitary conditions. There was a general discussion following the reading of these papers, and it was decided to take up at a future date the whole question of the medical inspection of schools in that city.

Increase of Insanity in Ontario.—According to the report of the inspector of lunatic asylums for the Province of Ontario, there were in these institutions on September 30, 1901, 4,604 patients as compared with 3,318 twelve years ago. The population for the different asylums in the Province is set down as follows: Toronto, 724; London, 1,034; Kingston, 509; Hamilton, 1,029; Mimico, 605; Brockville, 613. A comparison of the relative increase of insanity with the population shows that while the provincial population has increased from 1,396,091 in 1861 to 2,182,942 in 1901, or 56 per cent., the number of insane and idiots, officially known, has increased in those forty years from 1,631 to 5,880, or 260 per cent. The ratio forty years ago was one to 856; it is now one to 371. Of course, there is a great change in public sentiment within that time with regard to placing patients in asylums for treatment.

Prohibition in Ontario.—On October 14, 1902, the people of Ontario will have the chance of saying whether prohibition of the liquor traffic is to obtain in that Province. "The Liquor Act, 1902" is now before the Legislature; and it provides for a referendum on the above date. The question is of interest to the profession of medicine as certain clauses in the bill show. If carried at the polls, prohibition is to come into force on May 1, 1904. After that time the dispensation of all fermented, spirituous and malt liquors, and all drinkable liquors which are intoxicating, will be in the hands of the wholesale and retail licensed drug-houses and shops, and with the doctors. Retail druggists will only be permitted to sell "liquor" to private individuals under *bona-fide* doctors' prescriptions; and the quantity allowed to be kept by any retail druggist or physician will be not more than five gallons. A sick person will be allowed to keep liquor in his room if prescribed for him, but he must not let any other person drink it there. Hospitals will be permitted to keep it, but only for the use of patients and that on a physician's prescription.

New Medical Building for Toronto.—A deputation from the Medical Faculty of Toronto University waited on the Ontario Government during the past week with the object of securing Government aid to the extent of $50,000 for the purpose of erecting a new building for the Medical Department. The estimated cost of this new building, which is to be known as the physiological building, is $125,000; and it is proposed that part of it will be used by the Arts Department of the University. On this account the Medical Faculty thinks that the Government should place the above sum in the estimates, when they will undertake to finance the balance, $75,000. Dr. Reeve, Dean of the Medical Faculty, headed the deputation, and presented a by-law passed by the Trustees of the University, authorizing the construction of the new building, which he asked the Government to sanction. The Government was not very definite in its promises in the matter, the Minister of Education, the Hon. Mr. Harcourt, throwing out the suggestion that the Medical Faculty undertake to raise the entire sum, and then charge the Arts Faculty $2,000 per annum, the interest on $50,000.

Toronto Clinical Society.—At the regular monthly meeting of the Toronto Clinical Society, held on the evening of February 5th, Dr. E. E. King showed two patients who had had fracture of the spine. Three interesting cases of capsular nephrotomy were also reported, the first by Drs. W. P. Caven and George A. Peters, the other two by Dr. Alexander Primrose. Dr. Caven's case was a man, aged thirty-four years, who in the summer of 1899 was first told that he had Bright's disease. His kidneys were said to be sound in 1892, as he was passed at that time for life insurance. When he came under the observation of Dr. Caven he was passing from 60 to 80 ounces of urine in the twenty-four hours, with three to seven grams to the liter of albumin. Hyaline, granular and fatty casts were also present in great abundance; urea, from 1½ to 2 per cent. On January 3d of the present year he was placed under chloroform and Dr. Peters performed encapsulation of both kidneys at one sitting. Before the operation there had been a gradually-increasing number of casts in the urine, but there was none found in the following twenty-four hours. There was no material change in the albumin or in the quantity of urine passed or in the amount of urea. The patient was very ill for some days after the operation, but his general health soon began to improve. Dr. Caven then referred to the paper of Dr. Edebohls on the subject. Dr. Primrose stated that the first case he described was performed before Dr. Edebohls' paper had been published. His first operation was performed on the right kidney and the second on the left. The first was reported at considerable length, being illustrated by a carefully-prepared chart and by two photographs of the boy, who was ten years of age, one taken before and the other after the operation. For six months the boy had general anasarca and ascites. Paracentesis abdominis had been performed seventeen times. Albumin was present in the urine—1.6 per cent. The urine increased from twenty to forty ounces after the operation, and the albumin diminished to .03 per cent. Later Dr. Primrose cut down upon the left kidney and removed entirely the kidney capsule. At the first incision he followed Harrison's suggestion, but at the second he followed that of Edebohls and brought the kidney out of the wound. The child was critically ill for some days subsequently, but gradually recovered and the renal symptoms underwent remarkable recrudescence. The general edema disappeared. A very animated and extended discussion followed the reporting of these cases in which it appeared that the consensus of opinion was that Dr. Edebohls had not given to Mr. Harrison due credit for having performed the first operation, even though it had been performed on a case of acute disease.

GENERAL.

Atlantic County Medical Society.—At a meeting of the Atlantic County Medical Society, held February 5th, the following officers were elected: President, William Edgar Darnall; Vice-President, T. Senseman; Secretary and Treasurer, Edward Guion; Reporter, A. B. Shimer.

Cincinnati Obstetrical Society.—At a recent meeting of the Cincinnati Obstetrical Society the following officers were elected: President, Julia W. Carpenter; Vice-President, Wm. Gillespie; Secretary, Magnus Tate; Recording Secretary, E. S. McKee; Treasurer, C. D. Palmer.

American Laryngological, Rhinological and Otological Society.—The eighth annual meeting of the American Laryngological, Rhinological and Otological

Society will be held in Washington, D. C., June 2, 3, 4, 1902.

Scarlet-Fever Serum.—Prof. Leyden announces that he has perfected a new serum for the prevention and cure of scarlet fever. It is said to be derived from the blood of patients infected with the disease. A number of tests made in a Berlin hospital have been successful.

Virchow Hospital.—It is proposed by the municipal authorities of Berlin to erect a hospital to be dedicated to Virchow. It will accommodate 1,700 patients.

Hospital Gift for Greenwich.—Robert M. Bruce is to provide Greenwich, Conn., with an isolation hospital for the safe treatment of contagious diseases.

Gift to Johns Hopkins.—It was learned last week that 176 acres of land in the northern suburbs of Baltimore have been unconditionally donated as a new site for the Johns Hopkins University. Arrangements have been practically completed for the transfer of the land on February 22d, the date of the jubilee celebration of the University.

Battle Creek Sanitarium Fire.—The Kellogg Sanitarium was entirely destroyed by fire early February 18th. Four hundred patients, who were in the hospital and the main building, were taken out before the flames reached them. But two accidents occurred during the removal of the patients. One woman and a girl, names unknown, became frightened and jumped from the third-story windows. Both broke their legs. The origin of the fire is unknown. The main building was 312x100 feet and six stories high. The loss will amount to at least $300,000. As soon as the fire was discovered watchmen ran through the corridors arousing the sleeping patients on each of the six floors. Many of them were unable to help themselves, and were carried to places of safety by the nurses. The corridors filled with smoke very rapidly, and about half of the inmates of the building were forced to come down the fire escapes. The sanitarium stood on a hill, and the water pressure was low, therefore the water supply was insufficient. The managers of the sanitarium are positive that no lives were lost, as each room was visited three times by a nurse before the building was abandoned. The buildings will be rebuilt immediately.

Obituary.—Dr. John L. Million, of Springfield, Ohio, died last week from pneumonia. He was seventy-five years old. He was a surgeon of General John A. Logan's regiment during the Civil War, for thirty years was chief medical examiner of the Ancient Order of United Workmen and long a pension examiner.

Dr. W. A. Dudley, one of the oldest physicians in Petersburg, Va., died last week of pneumonia, aged seventy years. He had practised medicine there for fifty years. During the gold fever in California he and his mother drove from Virginia to that State.

Dr. Thomas Neall Penrose, medical director, U. S. N., retired, died Thursday, Feb. 13th, at the Naval Hospital in Philadelphia from heart and kidney trouble. He was retired in 1897.

CORRESPONDENCE.

CURES EXTRAORDINARY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Doubtless you are ever ready to chronicle new and wonderful strides in the healing art. With that belief, I respectfully submit the following:

My attention was recently attracted by the advertisement of Prof. Thos. F. Adkins, of Rochester, N. Y., who claims to cure the lame, the halt and the blind by means of his newly invented science, which consists of three parts mental powers and one part drugs (payable in advance). No disease or injury is of too complicated a character or of too long standing to baffle his seemingly supernatural skill.

Having worn a full-length artificial limb for several years, I was naturally led to hope by the professor's past achievements that it would be a very simple matter for him, by means of his highly developed mental endowments, to start in motion the healing vibrations which would change my patented limb into one of flesh and blood.

Accordingly, I wrote him in substance the chronic nature of my complaint; that my limb was devoid of feeling except for an apparent tingling in the toes occasionally; that I had practically no control over the knee-joint, and that, while approximately of the same length as the other, it did not appear so well developed, etc. By some inadvertence, I failed to state in so many words that it *was* a wooden leg, but doubtless such a slight omission from the symptoms would have no influence on the very clever diagnosis with which I was favored and which is enclosed herewith.

Truly, what a blessed era has been attained when one's physical or mental troubles will disappear by simply hiring another to think of them!

Should my case progress favorably, I shall take pleasure in reporting the same.

C. A. SARGENT.

240 W. 34th Street, New York.

January 24, 1902.

"NEW YORK INSTITUTE OF PHYSICIANS AND SURGEONS AND THE THOMAS F. ADKIN SANATORIUM.

ROCHESTER, N. Y., January 11, 1902.

"C. SARGENT,
"N. Y. City.

"DEAR FRIEND:

"Your request for free diagnosis came duly to hand. I have given your case my careful consideration, also consulted with my specialists relative to it and it is our combined opinion that you are suffering from uric acid diathesis with rheumatic manifestations, traumatic injury to limb causing partial paralysis.

"These troubles, while not yielding to the ordinary forms of treatment, magnetic, mental or medicinal, respond promptly to Vitaopathy. I have treated many cases *exactly like yours.*

"This method is original with me, being the result of years of study and experience. It is certain in its effects and never fails to bring about immediate and satisfactory results. My staff of specialists have spent years in treating such cases as yours in the ordinary practice of medicine. They are now devoting their entire time to the application of Vitaopathy to such cases, and the results are truly marvelous.

"If you allow me to take up the treatment of your case, I will do so with every confidence of perfecting a *permanent cure. I have hundreds of similar cases* under treatment, all testifying to the marvelous benefits received. As a reasonable person, you know that with the experience gained in treating so many similar cases, it is natural for me to understand such better than the ordinary physician who, perhaps, has only a few cases each year. 'Practice makes perfect' and it applies to the treatment of diseases as well as any other line. The more we practise the more we learn and the larger percentage of cures we make. I have the advantage of treating tens of thousands annually, while the ordinary physician treats but a few hundred. Remember that my treatment is especially prepared for each individual case. If you went to specialists, such as I have in my employ, they would charge you from $10 to $20

for an examination alone. I give you the attention of these specialists free. They have made a life study of certain diseases which their specialty covers, and if you place your case in my hands, it will have the very best attention that recognized specialists can give it. They will study your case continually and offer suggestions which will aid the treatment in curing you in the shortest possible space of time.

"The fact that my treatment is the only guaranteed treatment before the public ought to convince you of its merits. If you order a month's treatment and are not cured or materially benefited within two weeks' time, according to the terms mentioned in the enclosed guaranty contract, I will immediately refund your money. Now, this is certainly fair.

"For financial responsibility, honesty and integrity, I refer you to the Flour City National Bank of this city. For an immediate reference relative to the treatment, I invite you to write to Professor Geo. W. Savage, Warren, Pa., also to John C. Nelson, Dayton, Tenn. Both of these gentlemen have recently been cured by the Vitaopathic treatment. I shall be pleased to furnish other references if you so desire.

"At the low rate I charge, you cannot afford to be without this treatment—without all the expert attention I give you. If the druggists in your city were able to fill the prescriptions which I will have filled for you at my laboratory, their price for the remedies alone would be more than I ask for the entire treatment. The cost of a month's treatment is $5.00. Is there a physician in your city who could afford to treat you at this rate, giving you treatments twice a day as I do? Certainly there is not, and I am enabled to do this only because I treat so many cases that I can keep my specialists profitably employed all the time.

"A report of your case has been placed on file, so that upon receipt of your order there will be no delay in beginning treatment.

"You cannot afford to miss this opportunity. Remember that I have cured hundreds of cases that have been regarded as hopeless—cured them after all other methods had failed. Whether you take my treatment or not, I should like to hear from you. I will be glad to correspond with you relative to your case. I have the interest of humanity at heart aside from any financial consideration.

"If you will order a month's treatment within fifteen days from the date of this letter, I will give you my new course of instruction in Magnetic Healing absolutely free. The regular price of this course is $3.00. In order to introduce it in your community I have decided to give it to you free of charge. All I ask in return is that you recommend it to your friends whom you think might be interested. It is the best course in magnetic healing on the market. I guarantee this. I am sure you will be greatly pleased with it. I should like to hear from you by return mail so that I may know you have received this communication.

"Most cordially yours,

"INSTITUTE OF PHYSICIANS AND SURGEONS,

"THOS. F. ADKIN,

"President.

"P.S. I am sending you, under separate cover, my free book and circulars which I should like to have you read with great care, also fill out the symptom blank that you will receive with my circulars and return it to me with your order so that I may give your case a more thorough diagnosis.

"In replying, kindly use the enclosed envelope and your communication will receive prompt personal attention."

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

LUMBAR PUNCTURE AND FRACTURE OF THE SKULL—DIAGNOSTIC DIFFICULTIES IN INJURY TO THE SPINAL CORD—DUODENOSTOMY—INFECTIOUS ENDOCARDITIS—SUICIDAL MANIA DURING TYPHOID FEVER—MALTOSE IN THE LIVER AFTER DEATH—AMYLOLYTIC FERMENT IN THE BLOOD OF HEALTHY CHILDREN—ANTITUBERCULOUS SERUM—TRANSMISSION OF HUMAN TUBERCULOSIS TO ANIMALS—INOCULATION OF WHITE RATS WITH HUMAN CANCER—ACUTE TETANUS CURED BY CARBOLIC ACID—EXPERIMENTAL MENINGITIS.

DURING December the French Societies were active. Numerous interesting subjects were discussed, the following being the most important:

REYNIER at the Surgical Society, December 11, 1901, stated that he has recently had a case in which lumbar puncture was used for the diagnosis of fracture of the skull. The man was brought to the hospital in a deep degree of coma, with a paralysis of the left side. It was difficult to determine between a diagnosis of fracture of the skull and a simple hemorrhage into the brain, which would have made it a medical case. On the day after admission a lumbar puncture was made that resulted in the withdrawal of bloody fluid. This established the former diagnosis. At the operation of opening the skull a fracture of the parietal bone was found, with depression of the fragments, tearing of the dura mater and lacerations of the frontal and parietal convolutions of the brain. Thirty-six hours after the operation the patient died. The utility of lumbar puncture in these cases is still an open question, because there are instances in which withdrawal of the fluid by it has been of good effect and other instances in which no result whatever has followed.

TERRIER stated that the paper which Walther presented at the preceding meeting on a case of complete division of the spinal cord had induced him to explain to the Society the difficulties concerning the proper appreciation of symptoms proceeding from injuries to the spinal cord. His illustrations were drawn from facts collected by him during experiments on the horse. Frequently before the dura mater had been cut there appeared a light form of paraplegia. Later in another series of experiments on the dog of a similar character under the direction of Professor Longet, during which every effort was taken to avoid injuring the spinal cord itself, in removing the spinous processes it was found that paraplegia appeared without even so much as touching the spinal cord itself.

HARTMANN detailed the history of a woman who, after drinking a quantity of caustic liquid, showed signs of stricture of the esophagus which prevented all feeding by the mouth. At the operation he found the stomach so much retracted by scar tissue that it was impossible to perform a gastro-enterostomy or a gastrostomy. In order to assure the proper nourishment of the patient he was compelled to open the duodenum. This duodenostomy had immediate satisfactory results, but unfortunately the patient thought that she had the power to feed herself again by the mouth and made the attempt. The result was that she died in a few days, with purulent vomiting of gastric origin.

CLAUDE, at the Medical Society of the Hospitals, December 13, 1901, described two cases of infectious endocarditis, both latent, one with a subacute progress and the other with a chronic progress. The first case involved a man thirty-six years old for eight days afflicted with intense dyspnea with cyanosis of the extremities, albuminuria and high fever at the time of his admission. Over the chest were heard the signs of universal bronchitis with numerous loud râles.

There were, however, no murmurs at any of the valves of the heart, as apparently the sounds were hidden entirely by the signs of the bronchitis. Twenty-four hours later the man died in coma. At the autopsy there were found abundant wide-spread vegetations. Over the sigmoid valves of the aorta was a fibrinous exudate covered with small ulcers. In these deposits a large number of cocci were found on bacteriological examination. These were also abundant throughout the blood and at the sites of small hemorrhagic spots surrounded by infiltrations of embryonal cells, frequent in the liver and spleen. The man had, therefore, suffered from a septic endocarditis with ulcers and vegetations in the aorta. These have been a point of departure for a large number of microscopical emboli in the principal viscera. The second case was that of a woman thirty-four years old, received at the hospital in a state of prostration and advanced cachexia. Eight months previous she had had an attack of rheumatism in many of the joints of the body, in consequence of which she had become slowly and progressively invalidated. During her stay in the hospital this woman had not been able to take much nourishment, complained of pains in the abdomen and had constant diarrhea, with from time to time bleeding from the bowels and vomiting of bile. She gradually wasted away and died without having had fever while in the hospital. Her heart showed the presence of a diastolic murmur at the base, which was ascribed to an old insufficiency of the aorta. At the autopsy there were found tuberculous ulcerations over most of the surface of the intestines and throughout the lungs. The heart showed over the valves of the aorta scattered vegetations covered with fibrin. In one of the vegetations there was a small abscess containing a large number of streptococci, which did not, however, possess much virulence. The liver, spleen and both kidneys showed on microscopical examination the lesions of toxic degeneration most marked in the liver and kidneys. The diagnosis here appears to have been a chronic septic endocarditis which ended life by causing a toxemia.

SOUQUES read a communication in the name of Ribierre and himself concerning a young woman who had attempted suicide on the sixteenth day of typhoid fever by jumping out of a second-story window. The woman had been afflicted for forty-eight hours previously with a dread lest she be cut into small pieces and disemboweled while alive, because for several days previously she had not been able to control her urine. The authors stated this fact as a peculiar one for the delirium of typhoid fever and to indicate its possibilities. Even in this disease, it appears that fixed ideas with hallucinations are possible which give rise to impulse to sucide. It is therefore wise to watch with greater care all typhoid-fever patients who become delirious.

R. LAPINE and BOULUD (Lyons) at the Society of Biology, December 14, 1901, desired to state that in addition to glucose a small quantity of maltose can be found in the liver after death. They have been able to show the existence of this form of sugar in the livers of dogs very frequently, although they were nourished entirely with meat. The livers were left several hours at the temperature of their laboratory and then they were treated as follows: By means of ether maltosazone was isolated from glucosazone. Then, after hydrolyzation of the extract of the liver, examination with the polariscope showed that the deviation to the right had been decreased while the power of reduction had been increased. They have also been able to observe the presence of maltose in the blood of dogs the livers of which contained it after death.

NOBECOURT and SEVIN said that in children less than two years old the amylolytic power of the blood serum is so great that one c.c. of serum always produces when mixed with starch in twenty-four hours at a temperature of 37° a quantity of glucose which varies between 0.005 and 0.0199 gram. Before the end of the second month of the child's life this amylolytic power of the blood is very feeble or absent. At whatever age it may be strong, it never seems to exceed the strength of producing more than 0.0299 gram. In children of greater age and in youths the lowest degree of amylolytic power is after all high, and the quantity of glucose produced is comprised between 0.02 and 0.0299 gram.

ARLOING (Lyons) has been experimenting with a peculiar action of antituberculous serum which favors infection by the bacillus of tuberculosis attenuated under new conditions. If, into the veins of the rabbit, a mixture is injected made up of a variable amount of antituberculous serum and hemogeneous fluid-cultures of the bacillus of tuberculosis, there always takes place an exaggeration of the lesions of the disease in the organs of the abdomen and chest and their coverings. From these researches it seems likely that although administered by the veins and at the same time with an attenuated culture, the antituberculous serum has no power to arrest the disease; on the contrary it seems almost to favor it. Moreover, if serum is injected repeatedly in the tissue around the point of inoculation and sometimes in advance of the latter, it does not always afford any resistance by the animal to an intravenous injection of the culture of the tubercle bacillus.

S. ARLOING (Lyons), at the Academy of Medicine, December 24, 1901, related the results of three series of experiments concerning the inoculation of animals with human tuberculosis. The bacilli were taken from various sources, such as the sputum, fluid from pleurisies and the like. The inoculation was intravenous and carried out upon kine, sheep and goats. The lesions found in all of these animals were chiefly in the form of granulations, confluent or discrete, in the lungs, liver, spleen, nervous ganglia and kidneys. As a rule they were distinguished by a low-grade caseation. Similar to these experimental results were those already obtained previously, made by the same author and tending to show that human tuberculosis can be transmitted to animals. In this first series there were twenty-three animals inoculated. If such authors as Koch and Schütz have failed in their inoculations, Arloing claims that it was because they used cultures of feeble bacilli on the one hand, and that the doses of whatever cultures were used were really too small. Arguing from his own results this author believes that he is entitled to draw the following conclusions: (1) The virulence of the tubercle bacillus is a variable quantity and capable of adapting itself to certain organisms. It seems, therefore, certain that the human bacillus can certainly attack and grow within certain animals with an activity no less marked than that of the bovine bacillus. (2) One may produce in cultures pure human bacilli which are capable of infecting the kine, the sheep and the goat. (3) Since it is possible to find such a result, it is not necessary to claim a distinct kind of tuberculosis for either. (4) The unity between the tuberculosis of man and of animals due to the bacilli of Koch is indisputable. (5) Koch and Schütz are not justified after their experiments in claiming an absolute distinction between human tuberculosis and animal tuberculosis. (6) It is therefore necessary to continue to carry out all the precautions concerning infected meat that have hitherto been the rule.

MAYET, at the Academy of Sciences, December 9, 1901, read a contribution in which he set forth results

of experiments for the proof of the transmissibility of human cancer to white rats. These confirm the previous researches made by him and read before the Academy almost eight years ago (1893). In three cases Mayet has seen appear after repeated injections of an aqueous maceration of cancer without filtration small nodules in the kidneys of epitheliomatous type. In three other animals in the same organs he found cavities which were evidently the production of new growth. The introduction of cancerous tissue into the peritoneal cavity had in two animals the effect of producing small nodes in the liver and kidneys; in two other rats the liver was more actively attacked, showing multiple small areas of neoplasm and even presenting a large mass of neoplasm 2 c.m. by 2.8 c.m. in diameter. Three rats which had received a filtered maceration of sarcoma showed a neoplasm of the liver identical to the preceding on gross examination. Unfortunately no microscopical examination was made. In a third case the introduction of cancerous matter into the peritoneal cavity produced on the digestive tract, especially the stomach and small intestines, about twenty small tumors the size of a pea. His total experiments were the following: Positive results in five cases, doubtful results in seven cases, and negative results in forty-two cases.

ENRIQUEZ, at the Medical Societies of the Hospitals, December 20, 1901, reported a case of tetanus cured by injections of carbolic acid carried out by Bauer and himself. The woman had received an injury of the index finger followed by universal tetanus of rapid onset and progress, with symptoms referable to the medulla oblongata, namely, disassociation of temperature and pulse, attacks of dyspnea, vomiting, etc. During the first four days of the disease she was treated without results with chloral hydrate and injections of antitetanic serum; on the next two days injections of a solution of carbolic acid were used, 4 c.c. the fifth day and 6 c.c. the sixth day. Then without any remission having become apparent, the treatment was changed to the following: Each day 150 to 200 grams of blood were withdrawn, followed by the infection of 200 grams of artificial serum to which were added 3 c.c. of a 2-per-cent. solution of carbolic acid. At the end of two days of such treatment the convulsions had almost disappeared. The blood-letting was discontinued and only the injections of carbolic acid and blood-serum continued. To-day the cure is complete. This observation appears to prove that notwithstanding the unfavorable results obtained in experiments by Courmant, Doyon and Josias, it is rational to employ injections of carbolic acid in all cases of serious tetanus which threaten to end fatally in a short time.

DELILLE, at the Society of Biology, December 21, 1901, reported that he has produced plastic spinal meningitis experimentally by sclerosing poison by the bacillus of tuberculosis. The inoculation was made upon dogs through a lumbar puncture with a definite quantity of this poison (*i.e.*, the chloroform-bacilline of Auclair). After about three weeks' delay a chronic meningitis was present which ended in paraplegia with contracture and amyotrophy. These results were like those obtained previously with the caseating poison of this germ (ethero-bacilline). The examination with the microscope gave strongly typical lesions. The tubercles were formed of polynuclear cells at their centers and mononuclear cells of epithelial type in the middle zone and of lymphocytes in their autozone. There was also a large amount of fibrous tissue. From these experiments it is possible to conclude that the sclerosing and caseating poisons of the bacillus of tuberculosis produce in the meninges results of equal intensity.

SOCIETY PROCEEDINGS.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, Held December 4, 1901.

The President, Alexander Lambert, M.D., in the Chair.

Treatment of Lobar Pneumonia.—Dr. Charles E. Nammack read a paper with this title.

Discussion.—Dr. W. Gilman Thompson said that the paper was full of good sense. He sometimes thought it was a misfortune not to have some definite plan for the treatment of such a disease as pneumonia, yet cases of pneumonia vary so much that a method of treatment applicable to all varieties could not be formulated. He had used the inhalation of creosote and other substances and had watched this method of treatment as employed by others in hospital service, but he had not been convinced that it had any modifying influence on the disease. The treatment was based upon the idea that the inhaled substance reaches the focus of the disease, but the affected lung is occluded and therefore the substance cannot be drawn down into that part of the lung where it is most needed. It had been shown experimentally that when such vapor is inhaled it does not penetrate very deeply. He had practically abandoned this treatment because of the annoyance it caused the patient. With regard to the use of poultices and cold applications, he had never seen any difference in the effects of these various topical applications, and hence he was governed by what seemed to give the most relief. When there was much pain a large poultice would give relief, but ordinarily he did not favor the use of poultices, as they disturb the patient. Some time ago the speaker had made experiments to determine how deeply external heat or cold penetrates the body. He had had a patient suffering from an empyema who had a fistula eleven inches deep. A thermometer was inserted into this fistula and hot and cold applications were made externally, but he had never been able to affect the temperature of the parts beneath more than one-eighth of a degree. If such applications were used with this object in view they were certainly fallacious. The treatment was narrowed down to aiding elimination of toxic material and regulating the tension and strength of the pulse. When the pulse was full and bounding, he made use of nitroglycerin or, quite early and for a short time, he used aconite. When the opposite conditions were present, it was very desirable to reënforce the peripheral circulation by such remedies as Dr. Nammack had mentioned. He had not personally made use of the suprarenal extract in these cases, though this agent certainly raises the tension and gives the heart peripheral resistance. Physiological experiment, as well as clinical experience, demonstrates that this will often improve the character of the cardiac contractions. For this reason suprarenal extract might be useful in some cases showing much cyanosis. In some few cases in which he desired to influence the heart, he made use of digitalis. The latter, however, had the advantage that it could be given hypodermically. With regard to the treatment of the temperature, he was in accord with the author of the paper; he seldom attempted to reduce the temperature by cold applications unless the temperature rose above 104° F., or the patient suffered much discomfort from the fever. In such cases he used cold sponging or the cold pack. The latter was very soothing and was a general stimulant to the nervous system. He did not believe in the use of the Brand bath for pneumonia, and when pneumonia complicates typhoid fever he discontinued the baths, as

he had seen disastrous results from continuing them. It was important to keep the bowels active, securing at least one good evacuation daily. It prevents intestinal fermentation; anything which tends to distend the abdomen acts unfavorably by its mechanical effect on the diaphragm and by reason also of the coincident auto-intoxication. He always disliked to see a pneumonia patient with an attack of flatulent dyspepsia, and when it occurred, he used salol, turpentine stupes and the rectal tube. The use of alcohol in pneumonia had been well described in the paper. It was his custom to delay its use until it was distinctly indicated, never giving it as a routine measure except in grippe pneumonia or to old persons. When distinctly indicated, he would give it, for example, in the dose of one ounce every hour for a few times, or until a definite effect upon the pulse had been obtained, and then reduce the dose. If it were to do good at all, this effect would be secured very promptly. One symptom of pneumonia, which was often difficult to control, is violent delirium with restlessness and jactitation, and rapid pulse. Much had been said about the value of trional in such cases, and he had never hesitated to use it because he had never observed any depressing effect from it. It would often control the delirium in pneumonia even when quite severe. In addition, the bromides and codeine were useful. He hesitated always to give morphine in pneumonia, and when he did use it, it was in very small doses—not more than one-eighth of a grain. Last winter he had seen a case nearly rendered fatal by a physician giving the patient one-fourth of a grain. The same might be said regarding hyoscin, but in alcoholic cases it was difficult to get along without it. It should be used cautiously, not more than $^1/_{100}$ of a grain as the initial dose. He had not bled patients with pneumonia, for one could not tell how long a pneumonia patient would remain sthenic. He did believe, however, in the use of saline infusions in both pneumonia and typhoid fever—indeed, in almost any severe toxic condition in which the patient is overwhelmed with a systemic poison. Intravenous infusion or hypodermoclysis would often accomplish much in extremely severe cases of pneumonia. It was difficult to explain how the saline infusion acts. Possibly it dilutes the toxin in the blood, or acts by improving the arterial tension; at any rate, when the patient is *in extremis* it is a very serviceable remedy and often succeeds when everything else fails. He fully concurred with what had been said in the paper regarding the doubtful value of serumtherapy. Twenty or thirty favorable cases would be reported at times and then nothing further would be heard about them. The extremely variable character of this disease and the danger of drawing conclusions from a comparatively small number of cases should never be forgotten. It was a curious fact that, despite the various methods of treatment employed in hospitals for many years past, the mortality had remained just about the same.

Dr. John Winters Brannan said he thought he could best contribute to the discussion by relating his experience with a method of treatment with which most of the members of the Society were probably not familiar. Four or five years ago Dr. S. O. Vanderpoel had called his attention to an article in the "Medical Record" by a Dr. MacArtney on a new method of treating pneumonia and had asked him to give it a trial. The writer of this article had evidently had a large experience, his argument was scientific and his results had been very good. He stated that before using this treatment his mortality-rate had been about 16 per cent., whereas since adopting this plan in 120 cases there had been only two fatal cases, and they had been extremely severe types of the disease. A number of the patients had been elderly, and others had followed whooping-cough or measles. Dr. Brannan said that he had tried the treatment in 1897 and had carried it out to the letter. The idea was that in pneumonia there is a chill with internal congestion, and if the blood could be drawn again to the surface of the body, benefit would follow. Dr. MacArtney had endeavored to do this by prolonged diaphoresis. His plan was to take several hot bricks, dip them in hot water, cover them with cloths and put them around the patient, who is then covered up with blankets and kept in a profuse perspiration for from four to forty-eight hours according to the effect. The statement was that the temperature would soon fall to normal and the patient would have practically gone through the crisis, although the physical signs might not have changed. Sixty-seven of Dr. MacArtney's cases were aborted. A large proportion had been seen early, with the result that they had a normal temperature, freedom from pain and cough, and easy respiration in a few hours; others yielded only after two days of sweating and a mercurial purge. Dr. Brannan exhibited the charts and narrated histories of five cases in which this method had been tried by him. The first patient was a youth of eighteen, of good physique, but of alcoholic habits. The hot bricks had been applied on the fifth day of the disease, the day of his admission to the hospital, and had been continued for forty-eight hours; then, without any warning, the body temperature, which had been 104° or 105° F., suddenly rose to 109.8° F. Two hours before this the patient had been perspiring profusely and had then suddenly ceased to perspire. With the great rise of temperature he had become unconscious. The pulse at this time had been 140 or over. The bricks were taken away and he was given an ice bath with 25 per cent. alcohol for forty minutes. Toward the end of the bath the boy had had a convulsion; two minutes later he had become rational, and after this recovery had been uninterrupted. The second case was like the first, except that the bricks had been used for only two hours. Then the temperature had risen from 101° to 108°, when the treatment had been discontinued. This patient also had recovered. In the third case, the bricks had been used for three hours and the temperature had risen to 108°, with a coresponding rise in the pulse. After the bricks had been removed the temperature had come down to 102°, had reached the normal in a few days, and the patient had eventually recovered. In the fourth case, the bricks had been kept up for twenty-four hours, when the temperature had reached 107° F. and the pulse 144, though the respirations had not been materially affected. As soon as the bricks had been removed the temperature had fallen to 101° F. without cold sponging. In another day the temperature had risen again, and the patient died. In the fifth case the temperature had risen to 106° F. after eight hours' use of the bricks, but had come down to 99.6° F. afterward and the patient had recovered. In this case it is recorded in the clinical notes that the patient perspired profusely during the application of the bricks, and became restless and delirious, and the pulse became weak as well as rapid. It was at least comforting, the speaker said, to know that persons could have these very high temperatures and still recover. His experience was apparently another instance of good results being often obtained only by the originator of a new method of treatment. It is true that four of the five patients recovered, but it would seem that this was in spite of the treatment and not in consequence of it. In every case the temperature rose even while the patient was sweating, and at the same time the general condition became so alarming that energetic measures were necessary to restore the patient.

Dr. Alexander Lambert said that he, too, had been favorably impressed with the article of Dr. MacArtney. The cases just reported were good examples of heat stroke added to pneumonia.

Dr. R. J. Carlisle spoke of the treatment employed on the Third Division of Bellevue Hospital. He said that there the patient and not the disease is treated. Alcohol is not given unless distinctly indicated. To combat the fever the patient is kept in a cold pack. Digitalis is used sparingly and strychnine is used in small doses—about $^1/_{30}$ of a grain every four hours. For delirium and for the relief of insomnia, codeine is given the preference, though occasionally morphine is used in very small doses.

Dr. N. E. Brill said that it was evident from the paper and the discussion that one should be chiefly guided in the treatment by the indications imparted to the finger on the pulse and by the information obtained from the application of the stethoscope over the pulmonary artery. In spite of anything that can be done many patients with pneumonia will die.

Dr. Alexander Lambert said that he had investigated the serum treatment of pneumonia in twelve cases seen in the hospital. They had been taken just as they had been admitted to the hospital, regardless of the type presented. The action of the serum in all of them had been different from that reported by other observers in that there had been absolutely no change in the number of the leucocytes. The serum itself had been procured from a horse, the germ used being the pneumococcus obtained from the sputum of a pneumonia patient. After having been passed through 400 rabbits, one-twenty-millionth of a cubic centimeter had been used, and when injected into a rabbit it had caused the death of the animal in from thirty-six hours to four days. The dose that he had used for testing the serum had been $^1/_{1000}$ c.c. If the germ were injected behind the ear, and the injections of the serum were made in the leg of the rabbit, from 1 to 3 c.c. would be required to protect. It was evidently not an antitoxic serum, but a form of bactericidal serum. The bactericidal sera differ from the normal sera in that they possess an immune body. The substances which destroy the bacteria in the blood or the red cells in the blood when one blood is injected into another are composed of two definite substances, the immune body and the alexin or intermediary body. Immunization does not increase the alexin, but does enormously increase the immune body. The pneumococcus serum contains an enormous amount of this immune proteid. It gives all the reactions of globulin, but beyond this we know nothing. When this is injected into the blood it circulates through the lungs. In some patients who had, at the time of the injection, a definite pneumococcus septicemia, as proved by examination of the blood drawn from the vein, these pneumococci disappeared after the injection of the serum, and the patient recovered. This fact had led Dr. Lambert to think that it might be useful to use the serum in combating the pneumococcus septicemia occurring just before a fatal termination. By injecting the serum into the blood one introduces the immune body. It had been recently found that in typhoid fever the alexins were absent. In the use of typhoid serum the normal alexin is used up, and hence the desired action could not take place. Whether the pneumococcus serum failed to act for this reason or not he could not say, but in some patients it had had absolutely no more effect than water. In other cases the temperature had been reduced and had been kept down about two degrees, and the pulse had remained ten or twelve beats per minute lower. Three of the patients who recovered had been extremly bad alcoholic cases. One had had a right upper lobe pneumonia, which had involved successively the entire surface of both lungs. The serum in the blood could not affect the exudate which is in the outer space of the lungs—in other words, the serum was acting in closed tubes upon what was practically out-of-doors. Those who had spoken about the use of strychnine and glonoin had not stated whether they gave it by mouth or hypodermically. It seemed to him there was a great difference between these two methods of administration. The remedies would act surely and accurately when given hypodermically, while they would often fail to act satisfactorily if given by the mouth. Of course, in hospital practice the quantity of alcohol administered was enormously larger than in private practice, simply because most of the patients were accustomed to use large quantities of alcohol. This seemed to him the only reason why alcohol, which is a poison, acted so beneficially. He had found that alcoholic cases with intense delirium were very much benefited by the bed-bath and sprinkling the body surface with tepid water. This would often invoke sleep. He agreed with Dr. Thompson that trional is one of the best drugs to use for controlling the delirium of pneumonia.

Dr. Nammack closed the discussion. He said that he had not made mention in his paper of inhalations in the treatment of pneumonia, although during the first ten years of his medical experience he had been associated with a physician who believed firmly in their use. They had continued to use inhalations for a long time, until a physiologist had proved conclusively that the substances inhaled go no further than the primary division of the bronchi. However, two years ago he had treated some cases with heated oxygen, and one or two desperate cases had recovered. For a time he had thought there might be something in the claim that by heating the oxygen its diffusibility is increased. Another physician had subsequently told him that he had experimented upon a dog with superheated air, and had proved that the heating of the air or gas amounted practically to very little. He would congratulate Dr. Brannan on his courage in trying the hot bricks in four cases after the first case had developed a temperature of 109° F. As a rule, in private practice he administered strychnine and glonoin by the mouth, but he thought they act better when given hypodermically. The temperature in pneumonia and in acute infections generally was not the bugbear it was once thought to be, though, of course, this remark did not apply to hyperpyrexia. Among the poor, and in ill-ventilated apartments it was extremely useful to open the windows and give plenty of fresh air. The remarkable results reported by Newall among negroes treated in open cabins were more probably attributable to the free access of fresh air than to his very free use of strychnine.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held January 16, 1902.

The Vice-President, Hermann Knapp, M.D., in the Chair.

The scientific business of the evening consisted of a discussion on the subject of infant-feeding, opened by Dr. Joseph S. Winters.

Iron in Infant Food.—Dr. Winters said that milk is a very complete food for infants with the single fault that it is poor in iron. This is the reason why the infant is born with a much higher percentage of iron in its tissues than is normal to the adult. The iron is contained especially in the liver, from which Nature draws her stores for use in the important physiological functions in which it is concerned. This

supply of iron becomes exhausted, however, before the end of the first year of life and unless something is added to milk for the feeding of the infant the child becomes anemic. Cereals contain an important amount of iron in a readily assimilable form and consequently it is these that must be added to the infant's food in order to make it complete for nutrition. Oatmeal is the best of the cereals for this purpose in its general composition, as it contains more iron by weight than does beef. Oatmeal has certain objectionable qualities, one of them being the presence of a considerable amount of indigestible cellulose, but this can be removed by straining, and the oatmeal soup thus made becomes an ideal element for infant-feeding. In summer barley may be employed, because it seems to have less tendency to produce disturbances of the gastro-intestinal tract, though barley is poorer in iron and in fat than is oatmeal. The yoke of egg contains a large amount of nuclein—a very important substance for nutrition; it contains especially considerable amounts of phosphorus and iron, present in the form of very soluble organic compounds readily assimilable even by the infant organism. Besides this the yolks of eggs are rich in lime-salts and fat. The addition of a certain amount of egg to the diet of children should be begun shortly after nursing ceases to provide the main portion of the nourishment. A dry crust should be given the infant about twice a day after it begins to develop its teeth. The exercise of the masticatory muscles thus induced is excellent for their development, for children's jaws may fail of their proper development if mastication is not encouraged. Do not advise, as is so often the case, that infant food shall be always strained or chopped or minced; this deprives the infant of one of its best forms of exercise, that of chewing. The chewing of crusts, moreover, develops the gums and leads to the proper extrusion of the teeth, in additon to serving to keep the mouth clean. It must be borne in mind that the metabolism of nutrition in adults has for its only purpose the conservation of the individual in his present state. It provides only for passing needs. The metabolism of the child is meant to provide material to be stored for future use and is meant also to subserve the purposes of constant development and growth. The earthly salts are not needed by the adult, but they are indispensable in the child. Fat is of very little use to the adult except to provide heat, but it is a tissue builder in the child. The use of carbohydrates is scarcely necessary for the adult, while their consumption by the child serves to shield the proteids from absorption, and so leaves plenty of proteid material for the development of the organism.

Classes of Food.—There are five general classes of food, the nitrogenous, the fatty, the carbohydrate, minerals and water. All five kinds of food are needed in the child. Only the nitrogenous, the mineral and water are indispensable to the adult. Proteid material must be supplied for the constant growth of muscle and also to make up for the loss due to the constant activity of the child. This is the most important ingredient in the child's food and its absence leads to the stunting of the infant organism and the pallid state so familiar to the medical attendant on children. The phosphates are particularly necessary for new growth. All the cells of the body contain salts of phosphate. The nerves and the bones require them in especially large amounts. They are important also for the blood. It is not enough, however, simply to supply the phosphates as mineral salts; they must be given as organic compounds in forms in which they can be readily assimilated by the growing organism. This same thing is true of other organic salts. Scurvy occurs in children fed on heated milk because the heat has caused the breaking up of the organic salts so important for the child's tissues and they are present in the food in forms in which they cannot readily be assimilated. Not infrequently when scorbutic tendencies become manifest, the physician suggests that meat juice or scraped meat should be given to the child; these are mainly composed of the salts of the meat, they are very stimulant and serve only to irritate the nervous system falsely into manifestations of health that are really but lessening its vitality. Fat is an extremely important ingredient of infant food, it is especially needed in bone formation and, of course, the bone skeleton is constantly growing. The bone marrow is most important in the formation of blood. The supply of a proper amount of fat, then, is indispensable. The child of five requires half as much fat as an adult. The important question in the feeding of children is, When shall animal food other than milk and eggs be given? Meat is four times as nitrogenous as milk and contains twice as much nitrogen as farinaceous foods. A very large proportion of the nitrogen of meat, however, consists of extractives; these substances are not tissue-builders, but are only nerve stimulants. For the purposes of growth, then, vegetable proteids are just as valuable as meat. The nitrogen obtained from vegetables, besides, is free from admixture with the extractive crystalline substances which are so harmful. Meat is simply a stimulant and as such is not good for the child. Besides, the use of meat with its piquant flavors creates a distaste for cereals and milk and fat. The use of meat is as surely degenerative in its effect as alcohol. Tissue-building depends on alkaline products. All the tissues of the organism have an alkaline reaction. In the digestion of meat acids are formed and the absorption of these acids disturbs all cellular metabolism in the infantile and sensitive organism.

Vegetable Iron.—There is a distinct relation between the coloring matter of vegetables and the coloring matter of blood. Many years ago Bunge showed that iron occurred in normal physiological conditions in vegetables and could more easily be absorbed from them than from any other substances. Most of the green or red or yellow vegetables have an iron organic coloring matter in notable amount. The present teaching to give beef juice in anemic conditions is an unfortunate error. Undoubtedly many of the nervous diseases which have become so familiar in recent years in children are due to an excess of meat in the diet. The increase of such afflictions as chorea, petit mal, night terrors, laryngismus stridulus, is due to the irritative condition of the nervous system thus induced. Undoubtedly much of the irritability and the peevishness of modern children, even when no actual nerve disease exists, is due to too early allowance of meat in the diet. Meat should not be given before the child has completed its second year and then not more than half an ounce. This should not be allowed oftener than every second day until the child has reached its fifth or sixth year. The increase of weight and muscles that occurs as a consequence of the consumption of meat is readily lost. This is a common and well-recognized clinical observation. The increase of weight that comes as the result of the use of farinaceous food is much more durable. This can be readily understood when the solidity of the tissues of country children and their capacity for withstanding disease are recalled.

Forcing on Meat.—Dr. Milton Yale said that Dr. Winters' conclusions were also his own. It is deleterious for any child to be forced on meat. Many of the children of the better classes become gouty and arthritic very early in life as a consequence of the early consumption of meat in too large amounts. Very little

normal development is allowed to these children. All the exercise that they have is a personally conducted walk with their nurses in which even their volition as to what form of exercise they shall take is of very little natural benefit. Such children, as the result of meat stimulation, learn to refuse the more healthy food materials that would be proper for them. The use of the squeezed juice of steak is an especial mistake and its stimulant effect is such that Dr. Yale is accustomed to speak of it as the child's cocktail. The kitchen is really at fault in many of these cases; it is much more easy to prepare squeezed beef-juice than the vegetable foods that would be much more suitable. Personally, Dr. Yale finds it of extreme advantage to make friends with the cook and to make suggestions with regard to the preparation of food that will be of practical service. Childrens' meals are apt to be neglected in the cooking because prepared before or after regular meals in the kitchen and because all the culinary arrangements are made with the idea of serving the adults of the household. The cook in the household plays an important rôle in the feeding of the children. Frequently, though she may know perfectly well how to prepare food for adults, she is inexperienced in what is proper for children; yet it is on her that the preparation of the child's food ultimately falls. Children like the piquant taste of meat preparations, and so are prone to get more of these than is good for them. As a rule the mother does not wish to disturb the household arrangements below stairs and so the doctor must prove the intermediary. It is good for the doctor to know his cook-book and for the cook to know the doctor.

Country Life.—Dr. Dorning said that he could only emphasize some of the good points made by Dr. Winters. It is a very favorable thing for children to be brought up in the country. Outdoor fresh air in the country gives a relish and enables children to take more food, while the country tendency is to give them the simpler foods. The present tendency to give meat juice early in infant life must be deprecated. It is no unusual thing to find that at three months of age the child is taking half an ounce to an ounce of meat-juice several times a day. No meat should be given until the third year is nearly reached. The child does not need its stimulant effect and the nutrition it supplies does not justify its use. It is not enough to give as food only the chemical substances that are necessary to support life. They must be there in an assimilable form. Charcoal and sea-salt and water actually contain all the chemical ingredients that support life. Needless to say they are not ideal food materials. The organism must have the chemical ingredients necessary in the form of organic combinations that can be used for metabolic purposes. Whole wheat should be given rather than the fine milled wheat which lacks so many important ingredients that form the basis of ordinary flour as at present supplied.

Prophylaxis of Disease.—Dr. Southworth said that the question of child-feeding is especially important as regards the prevention of disease. Children's ill health is often due to poor nutrition. Lowered vital resistance because of this allows them to contract various infectious diseases. Well-nourished children escape illness. Nurslings having an abundance of ideal food for their age practically always escape infectious diseases. The transition period of a child's life, when it passes from milk to a mixed diet, is especially dangerous with regard to the contraction of various ailments.

Milk as Food Basis.—Milk must form the basis of infant food until the third year. This must be impressed upon parents for they are liable to neglect it. If children refuse to drink milk in the ordinary way from a cup, it is even advisable to prolong the use of the bottle for some time. During the latter part of the nursing period cereals must be introduced into the food, at first being used to dilute the milk. The transition period becomes less dangerous under these circumstances.

A Good Word for Beef-Juice.—Dr. Southworth would not condemn beef-juice as freely as most of the other speakers of the evening. He believes that it is an excellent tonic and a thoroughly stimulant hematogen. Pale children, weak and delicate, who are not able to obtain sufficient nourishment from the digestion of vegetable material, are often able to obtain their nutrition better from meat than in any other way. Of course, too much must not be used and it is evidently the abuse of meat-juice that has led to all the serious objection to it. During the second summer particularly, when, owing to the drain on the system of teething and the digestive disturbances of the transition period, there are special calls upon the vitality of the child, meat-juice as a nutritive stimulant makes an excellent addition to the dietary. It must not be given up entirely, then, because it happens at times to be used irrationally by those who do not realize its proper limitations.

Infantile Eye Diseases.—Dr. Bates said that many of the eye diseases of children are obstinate to treatment, except under proper diet. Scrofulous conditions of the eye, eczema and phlyctenulæ must be treated by improvement of the general condition first of all. In many of these cases, the ordinary milk and carbohydrate diet will fail to build the child up properly. Dr. Bates recently had a case under observation in which the patient failed to get better under a mixed diet in the city and grew worse in the country on an exclusive milk diet. When given cod-liver oil, however, with an abundance of meat-juice, improvement set in almost at once. In the anemic conjunctivitis of children that is so often accompanied by tendency to nose bleed, meat-juice is an important stimulant nutritive that is actually remedial in effect.

Return to Nature.—Dr. Elmer Lee said that the secret of good feeding for infants consists in a return to organic nature. The dividing of nature's units of food material reduces their value. Only part of the wheat is ground up into the modern flour and so some of the most nutritive portions of the cereal fail to get into the bread. Under the present system, children are overfed, but undernourished. The animals live on cereals and vegetables and convert them into their tissues, but in so doing exhaust a part of the material in the cereals and grass. Meat is the poorest and the dearest of foods. It costs four times as much and goes only one-third as far as does wheat, for instance. The human body is a storage cell. The ingredients that go to make it up are the battery fluid. The latest storage battery that promises to be the most successful has an alkaline reaction; all the old storage batteries had acid reaction. All human tissues are alkaline, yet they have been treated with meat, which has an acid reaction.

Prepared Foods.—In closing the discussion Dr. Winters said that the chemical composition of food, as is well known, by no means represents its nutritive value. There are many prepared foods on the market, but practically all of them are founded on the idea that certain chemical ingredients, without regard to their origin, may become nutritive portions of infant food. All artificial foods are prepared on this false notion. Every one of them should be discarded, because in their preparation organic combinations are broken up and the material is present in a form in which it is not readily assimilated, especially by the infant organism. As a matter of fact, food materials, treated as are those for the artificial foods, are deprived

of every bit of nutritive value. It would be very easy to recognize this fact, only for the conditions in which they are used. Clinical deception is perpetuated because these foods are used in combination with milk. The other ingredients are worthless, or of very little nutritive value, but the milk serves to keep up the infant nutrition to a certain extent. In Dr. Winters' experience the use of whole wheat is a common source of digestive disturbance in the children of better families in our cities. The child's stomach does not seem capable of digesting the coarser materials of flour that are usually thrown out in making the finer flour. Dr. Winters has had a recent experience in which a child fed on whole wheat and suffering from severe digestive disturbance and malnutrition for a long time got well without drugs when the food material containing so much cellulose and irritant indigestible material was removed from the dietary. Too much can not be said against the abuse of meat-juice in children. Dr. Winters has seen anemia develop hundreds of times as the result of the use of meat-juice in place of one of the feedings, as is so often advised now. There is no surer or more frequent cause of anemia in children on Manmattan Island than the use of meat-juice. The sooner its employment is discouraged under the age of two years, the better it will be for the health of large numbers of children.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENERAL MEDICINE.

Stated Meeting, Held January 21, 1902.

The Secretary, James N. West, M.D., in the Chair.

Ergot in Graves' Disease.—The paper of the evening on ergot in exophthalmic goiter was read by Dr. Van Sanvoord. Dr. Van Sanvoord has employed this remedy in a number of cases; he reported good effects from its use before and now has every reason to think that it is very beneficial in the symptomatic treatment of the disease. He asks that other observers try the remedy and report their results. It would seem that a therapeutic advance in the treatment of these cases, usually so obstinate, may thus be effected.

Distance Cardiac Murmur.—Dr. Louis Faugère Bishop presented a patient with a loud-beating heart-murmur that could be heard at some distance from the chest-wall. The patient, a colored woman of about forty, suffered four years ago, from a severe fright; afterward she developed cardiac symptoms; these continued for some time and she came to the Colored Hospital, where it was found that a loud murmur, systolic in time, was audible for some distance from the chest-wall. The patent has been conscious of this murmur herself for some time. She has no very severe symptoms from her cardiac affection and continues to be reasonably comfortable.

Myocarditis.—Dr. Bishop presented two cases of myocarditis. In each of them a distinct sign of beginning cardiac incompetency was tenderness below the xiphoid cartilage. The patients were able to do a certain amount of work, after intervals of protracted rest, but then began to have cardiac symptoms. One of the most significant warnings that they were overworking their hearts was the occurrence of this tenderness, just below the lower end of the sternum. In the male patient particularly, this extended somewhat from the median line toward the right and was evidently due to some congestion of the liver.

Dilatation of the Heart.—Dr. Bishop presented a patient suffering from great dilatation of the heart, whose cardiac incompetency has been quite marked. He is a scene-shifter who suffered from rheumatic valvulitis when quite young; his occupation required so much rushing around that he developed an acute dilatation of the heart. There was a peristaltic pulsation all over the precardium and a distinct gallop rhythm. General anasarca was present and the liver was enormously swollen and quite tender. Dr. Weber, the house surgeon, found some good digitalis-leaves at a wholesale drug-house and made a home infusion of digitalis, which was freely given; the man passed 200 ounces of urine the first day, 150 ounces the second day, and 100 ounces the third day. Under this treatment the anasarca rapidly disappeared. The result shows the effect of really good digitalis.

Musical Murmurs.—Dr. Burt said he had met with a number of these murmurs that could be heard some distance from the chest-wall. In one case he could hear it for six inches; in another he had been able to heaf it for a distance of two feet. By a strange coincidence this former case of distance murmur followed immediately upon a fright; the patient had noticed it himself and came to tell of the music-box in his chest; it had been noticed also by his wife. Under rest and heart tonics it decreased and gradually disappeared. The patient was, however, a dispensary patient and the present condition is unknown.

Bovine Heart.—Dr. Burt presented a patient with an immensely enlarged heart. The condition of dilated hypertrophy is very extensive, so that the outer border of the heart can be felt as it rises in pulsation against the ribs, three inches at least outside of the nipple line. The immense size of the heart can be judged from this, since it dips back under the lung and only a portion of the anterior surface comes against the precardium.

Aneurism of Aortic Arch.—In this same case there is a large aneurism of the ascending portion of the arch of the aorta. There is a distinct thrill and bruit and an expansile pulsation. The most interesting point about the case is that the history seems to indicate that the cardiac condition and probably the aneurism also date back for twenty years. Both conditions have become stationary and neither of them produce very serious symptoms. The dulness to percussion shows the outline of the large aneurism and this has also been seen by means of the X-ray. Dr. Burt presented an X-ray picture of the interthoracic condition.

Tricuspid Regurgitation.—Dr. Burt presented a case of leaking at the tricuspid valve with expansile pulsation of the liver. The patient gives a history of excessive beer drinking and when he came to the hospital was suffering from an immense ascites. His liver was found to be considerably enlarged, though this grew less in size under rest and cardiac tonics. The heaving impulse in the hepatic region is evidently due to tricuspid regurgitation into the liver. This impulse can be felt very plainly even when the patient is standing up and is at once apparent when he is lying down. In this case mitral regurgitation accompanies the tricuspid regurgitation; the subjective symptoms are not very serious. Dr. Burt believes that the removal of the fluid somewhat slowly from the abdomen in ascites favors its non-recurrence. It gives no guarantee, however, against the return of the fluid. When the old Dieulafoy aspirator was used, and it took nearly a day to remove a large amount of ascitic fluid, patients still had regular reaccumulations of the ascitic fluid.

Heart Lesion and Prolonged Life.—Dr. James K. Crook presented a patient whom he had presented to the New York State Medical Society at its meeting five years ago. This patient has suffered from mitral leakage since 1864. In January of that year he suffered from articular rheumatism, being at that time sixteen years of age. In April of the same year, he suffered

from cardiac symptoms and the attending physician told him that he had a mitral lesion. He improved somewhat, but as his cardiac symptoms continued he consulted Dr. Flint of New York who assured him that his physician's diagnosis was correct and that he had a mitral cardiac lesion. Since then he has come under the care of more than half a dozen well-known New York physicians, all of whom assured him of the existence of a heart lesion and most of them gave an unfavorable prognosis. When presented to the New York State Medical Society in 1897 he was in excellent general condition, suffering from no subjective symptom, able to continue his occupation and only troubled occasionally by digestive disturbances. At the present time this very satisfactory subjective state continues. He has suffered from mitral regurgitation for thirty-eight years and there is at the present time a systolic murmur at the apex of his heart which is slightly transmitted toward the left. The chief interest of the case is, of course, the long continuance of his condition without serious symptoms. It is very evident that there is a better outlook in these cases of mitral regurgitation than has usually been supposed. Insurance companies are coming to recognize this fact and to modify the unfavorable prognosis on which they entirely refuse these cases.

Mitral Regurgitation for Forty-six Years.—Dr. James J. Walsh said that he had seen a case in Vienna in which the history of mitral incompetency extended over forty-six years. When seen the patient was approaching his seventieth year and over forty-six years before had been told by Skoda that he was suffering from mitral regurgitation as the result of rheumatism. His rheumatism occurred some three years before his consultation with Skoda so that it seems probable that he had lived for nearly or quite fifty years with a mitral lesion that gave a distinct systolic murmur at the apex. During this long life he had very few subjective symptoms and his occupation as a shoemaker had not proved burdensome at any time.

Good Prognosis.—Dr. Burt said that the good prognosis of cardiac lesions is not confined to the mitral valve and that even aortic insufficiency may also exist for long periods without giving serious symptoms. He had a patient under his observation some time ago suffering from aortic insufficiency. This lesion first manifested itself forty-five years ago. The man had gone through the Civil War and afterward remade his fortune, which had been lost by the fall of the Confederacy. He became the lawyer for the Plant system of railroads, so that he had accomplished plenty of work and yet had suffered very little from his heart. Occasionally, at times of overstrain, there were symptoms of cardiac incompetency and stimulants and heart tonics were needed. He died suddenly about two years ago as the result of his heart lesion. Dr. Burt said that the best sign that the prognosis of heart lesions must not be as unfavorable as formerly is found in the fact that such patients so often outlive the physicians who make the bad prognosis. The insurance companies are not so prone absolutely to refuse heart cases as before, and arrangements are being made by which sufferers from cardiac lesions can be accepted under modified conditions. This is as it should be for the prognosis in cardiac cases is not absolutely, but only relatively unfavorable. The future of the patient depends upon the condition of his heart muscles and its ability to compensate for the mechanical disadvantage of the valvular lesion.

Musical Distance Murmur.—Dr. Alfred Meyer presented a patient in whom a distinct musical murmur can be heard in a quiet room some distance from his chest-wall. The man is thirty-three years of age, has a negative family history and never had any rheumatism. Three years ago, when he came under observation because of symptomatic cardiac incompetency, he gave a history of smoking ten cigarettes a day and of taking considerable alcohol. His alcoholic history was carefully inquired into by Dr. Meyer himself in order to be sure of the details. It is often the custom to say no alcoholic history or moderate alcoholic history, without sufficient inquiry. The man confesses to having taken four drinks of whisky a day, one of them before breakfast on an empty stomach. This seems to be an important detail in the alcoholic history, since the absorption of the alcohol is so rapid at such times. The patient first heard the noises in his own chest and then his wife heard them. Shortly after this, as the result of some anginoid symptoms, he came to the hospital, where it was found that there was a musical diastolic murmur best heard in the aortic region to the left of the sternum, but also audible all the way down the sternum and in the back as low as the sacrum. The man improved considerably under rest and heart tonics, and has been able to do some work without serious discomfort.

Hearing Distance Murmur.—In order to hear distance murmurs well it is important that the room should be extremely quiet and the ear should become accustomed to the note of the murmur by listening to it with a stethoscope until it is fairly impressed upon the auditory apparatus. There is no doubt that under these circumstances the murmur is heard better and at a greater distance from the chest. It is not that the psychological element adds to the distance by the imagination of sound, but that the physical auditory apparatus is rendered more capable of hearing.

Distance Murmur.—Distance murmurs are very rare. The explanation of the murmur that has been given as the result of autopsies in a certain number of these cases is that there is a dilation of the orifice at which the murmur occurs, in this case the aortic ring, and that as a consequence the valves do not completely close up the orifice and the regurgitating blood flowing over the tightly stretched edges of the valve leaflets produces vibrations and consequently the musical sounds. The mechanism is thus somewhat the same as the air going over the vocal cords and producing sounds. In one reported case there was some thickening of the edges of the valves, but rough surfaces do not produce a musical murmur and as a rule one must conclude that there is no pathological change in the valve tissues.

Etiology.—In the present case the murmur seems to be due to a combination of alcoholism and excessive use of tobacco. All other causes of heart disease can be excluded. There is some suspicion of lues in early life, though there have never been any serious symptomatic or pathologic conditions as a result. There is an accompanying systolic murmur in this case, but this furnishes no hint to the etiology of the valvular disturbance and does not supply an explanation for the diastolic musical murmur at the same valve.

Diastolic Musical Murmur.—Dr. Burt said that this is the first diastolic musical murmur that he has ever heard. Systolic musical murmurs are rare enough, but diastolic musical murmurs are much rarer. Dr. Burt has seen only two cases with distant musical murmurs in twenty-five years' experience of heart disease. This experience has included the large number of admissions to the Bellevue Dispensary for over twenty years.

Disposal of Cardiac Cases.—Dr. Martin gave the clinical history of a case of chronic myocarditis. The patient, a woman of forty-nine, suffered from carcinoma of the breast four years ago, and the gland was

removed. There was secondary carcinoma of the lymphatics, and these were operated upon six months later. There has been no recurrence and at the present time the X-rays fail to disclose any cancerous tissue. She is suffering, however, from cardiac incompetency and has made the rounds of the hospitals. Under diet and rest with proper nursing and care she improved. As soon as dismissed from the hospital, however, and compelled to work for her living, she relapses into her former condition of cardiac incompetency and must take to her bed. Such patients cannot be kept in hospitals for a long time, because they would soon take up all the available space. What is needed is a sanitarium or home for cardiac cases. They are unfit for self-support and when out of hospitals are, unless under exceptionally good circumstances, sure to be in distress. An attempt has been made to supply hospital care and treatment by informing visiting nurse associations of the presence of such invalids in certain parts of the city and calling attention to their special need for care. It is possible that these benevolent nursing societies and college settlement visitors and those from other charity organizations might be warned in the same manner, and suggestions given as to the way in which they could be of help to such patients. Certainly at the present moment these cardiac cases present an important and, as yet, unsolved philanthropic question that demands solution in the immediate future. Charity could find no better or more deserving field for its exercise than among this class of patients.

Solution of Problem at Colored Hospital.—Dr. Bishop said that one solution of this problem was at present in actual progress at the Colored Hospital in this city. These cardiac patients are kept in the hospital wards, where, fortunately, as yet there is no lack of room for all applicants. Whenever, as the result of rest in bed, careful diet, nursing and medical care, they are well enough to work, they are allowed to help with the various duties of the hospital, and especially to do light work in the laundry. This enables the hospital to be somewhat self-supporting, yet keeps these patients under constant medical supervision, so that their condition does not become serious, and whenever symptoms supervene, they are once more put to bed. Dr. Bishop thinks that the real solution of this problem of care for cardiac patients must come in the form of an institution similar to the epileptic colony. Cardiac patients need the outdoor air and a certain amount of light farm work may not prove too exhausting for many of them. Patients themselves will not be satisfied in an institution where they have nothing to do and where they have no sense of accomplishing something for their own support. A colony seems an ideal solution of a difficult philanthropic problem and this idea must be considered first of all by those who would benefit these cardiac patients.

Good Nursing.—Dr. Burt said that the term "good nursing" has recently come to be abused. Doctors use it and imply that it is the only method of treatment for many forms of disease. The general public accepts an entirely wrong significance of the term, quite different from that intended by the physician. "Good nursing" means not only the presence of a trained nurse in charge of the case, but proper symptomatic treatment. Without the treatment of symptoms, as a rule, nursing is a failure. For symptomatic treatment a very careful, conservative physician is needed in charge of the case. When doctors use the term "good nursing," they should impress the idea that this implies good medical attendance as well as mere nursing.

Special Hospital.—Dr. Burt said that for cardiac cases there is need of a special hospital quite as much as for tuberculous cases. At the present moment the hospitals are entirely unable to provide the necessary room for the chronic cases of heart and arterial disease that are constantly under treatment. When philanthropists get through with the foolish notion that the head is the only part of the human organism that needs specially to be cared for, they may do something for the heart as well as the head. One would be tempted to think that the reading of many books was the one thing necessary in life, as if there were not quite as much harm as good done by reading. Physicians who see so much suffering in the world see many opportunities for the investment of philanthropic funds where they would do much more for humanity than they can invested in libraries.

Care of Dependents.—Dr. Alfred Meyer said that in the care of cardiac patients, as with regard to those suffering from tuberculosis, there is always the additional question of the care of those dependent upon the patients, as well as the patients themselves. This is really a therapeutic question for it may be well understood that no patient suffering from serious illness can improve consistently in health and gain strength with the knowledge that those whom he loves are suffering while he is under care. Other countries have faced this question of the care of dependents, especially as regards the question of tuberculous patients, and private charity must face it in this country.

Medical Philanthropy.—With regard to medical charity Dr. Meyer finds very promising indications of the trend of present day charity toward medical objects. It is sometimes said that medical men and their work for the poor are unappreciated by the general public; as a matter of fact, however, medical men are placed on a higher plane of consideration than are those of other professions, and while more is expected of them there is an underlying generous appreciation of their professional work that is of itself a striking compliment to professional philanthropy. Nearly every one finds it easy to say how money shall be spent for philanthropic purposes and the millionaires who have it to distribute find it a difficult problem to satisfy the many claims. True humanitarianism, however, is an especially prominent feature of the feeling of the wealthy at the beginning of the new century.

NORTH BRANCH OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, Held January 16, 1902.

The President, A. M. Eaton, M.D., in the Chair.

The Diagnostic Value of a Digital Examination in Diseases of the Rectum.—The author, Dr. H. A. Brav, dwelt at some length on the fact that the general practitioner treats diseases of the rectum too much from a symptomatic standpoint and without making local examination. Patients with rectal difficulties usually present symptoms of extreme nervousness, melancholia, sometimes with suicidal intent, pain in the rectum, digestive disturbance, disorders of the liver, etc., and very often the patient is treated for the most prominent of these symptoms without the real cause of the trouble being suspected. Several cases were cited in support of this theory; one patient had been treated by many physicians for chronic constipation. When he came under the author's observation a digital examination was made which revealed a stricture 2½ inches above the external sphincter muscle. In another case which was being treated symptomatically for constipation, local examination revealed carcinoma of the rectum situated two inches above the external sphincter muscle. The method of making the examination was given in detail and especial stress was laid upon the importance of ex-

amining the parts close to the anus, as well as those higher up in the bowel.

Operative Treatment of Hemorrhoids.—Dr. Charles F. Nassau read this paper. The different methods of procedure in operating on this condition were fully discussed and the view expressed that the ideal method of operating is to treat the hemorrhoidal area in the same manner as one would treat a varicose condition in any part of the body, thus avoiding the pain produced from unhealed ulcerating surfaces, the result of sloughing away of ligatures, or the granulating lines left by the clamp and cautery. As regards the use of escharotic injections, they were considered of no use in external piles and, although producing considerable benefit in some cases of internal hemorrhoids, the dangers attendant upon their application were such as to overbalance their merits. Local infiltration anesthesia was recommended in suitable cases, although it was thought to increase the technical difficulties of the operation. In cases having comparatively small internal hemorrhoids, stretching of the sphincter ani and careful attention to the fissures (the application of the cautery, division of the base to healthy tissue or complete excision, followed by careful suture) was recommended. In minor cases of isolated external piles, excision of the veins involved followed by careful suturing of the skin wound was recommended. The Whitehead operation, while based upon correct grounds, was considered faulty in its technical details, and, as it is also sometimes followed by stricture and even incontinence, it was not advised. For the more difficult cases the excision of the entire pile-bearing area, followed by suturing, was thought to be the most desirable procedure. This operation can be done either under local anesthesia or ether, according to the indications of the particular case. Considerable stress was laid upon the importance of general and personal hygiene following this treatment and the patient should be especially instructed to secure a daily action of the bowels.

The Diagnosis and Treatment of Carcinoma of the Rectum.—Dr. George C. Ross considered that there are five varieties of this condition, epitheliomatous, scirrhous, encephaloid, colloid, and melanotic carcinoma or sarcoma, the frequency of their occurrence being in the order named. The most common form of cancer of the rectum is the variety of epithelioma known as adenocarcinoma. The most rapidly fatal form is the sarcoma or melanotic carcinoma, which is also the most rare, only eleven cases of this variety being recorded. The importance of digital examination and inspection in all cases of local ailment of the rectum was emphasized and the author considers that in cases of doubt the administration of a local anesthetic, or even of ether, if the case indicates, is not only permissible, but demanded when necessary in order to secure a specimen of the growth for microscopical examination. Cancer more frequently occurs in old age, the percentage of cases increasing very rapidly after the age of twenty years.

Total extirpation in the early stages of the disease was considered the only hope of a cure, while in the later stages palliative measures alone can be employed. Statistics regarding the immediate mortality-rate were given and it was shown that about twenty to thirty per cent. of the cases are immediately fatal when radical measures are employed, the causes of death being peritonitis, shock and retroperitoneal infection, with resulting septicemia. There are very few reported cases in which the patients have remained perfectly well for a period of four years, and the best authorities on this subject seem to give a very unfavorable prognosis. The two principal methods used for extirpation of the diseased rectum are Kraske's operation and its modifications and one which is applicable in the female, using the route of the perineum to gain access to the bowel. This operation is claimed by those who have used it to be a very satisfactory one. In the cases in which radical treatment is not indicated, either because the disease is too far advanced or for any other reason, colostomy is the only alternative; this operation was also recommended in some instances as a preparatory measure in order to allow the patient to build up his strength before radical procedure was undertaken.

Discussion.—Dr. William L. Rodman opened the discussion and stated that he considered too much stress could not be laid upon the importance of a thorough digital examination in diseases of the rectum. In regard to the different varieties of carcinoma he considers adenocarcinoma of the rectum of most common occurrence; in his experience the scirrhous and encephaloid forms of the disease have been rare. Several instances were noted of cases which had come under his observation in which, contrary to the usual rule that carcinoma of the rectum usually proves rapidly fatal, five, ten or even twelve to fifteen years had elapsed before death, the patient in the interim remaining in fairly good general condition. If radical procedure is to be undertaken the importance of early operation was urged, and when the disease has become far advanced before surgical relief is sought colostomy is thought to be the most advisable measure, as at this time only palliation can be hoped for, and this operation seems to afford more relief than any other. With reference to the different operations in use for the removal of hemorrhoids he thought that ligation is to be preferred. The Whitehead operation makes a major procedure out of what should be a minor one. Excellent results may follow carbolic-acid injections, but the untoward results sometimes following this method more than overbalance its merits. The chief objection to the clamp and cautery seems to be the liability of hemorrhage following the operation if the stump is cut off too close. In some instances embolism, followed by sudden death, has occurred. In the ligature operation, the hemorrhage, if it occurs at all, usually occurs before the patient recovers from the influence of the anesthetic and no instances have come under his observation in which secondary hemorrhage has taken place.

Dr. E. W. Holmes urged the necessity for thorough local examination in all cases of rectal diseases and cited instances where under mistaken diagnosis, due to the physician relying wholly upon the clinical conditions present, grave errors had been made in treatment and relief by operation delayed until it was too late. Reference was made to an electric proctoscope which had been recently placed on the market and which seemed to be a very valuable instrument.

Dr. G. Betton Massey discussed at some length the different varieties of cancer and the various methods employed in their treatment. From his own experience he is inclined to favor the electric cautery. In two cases which have recently come under his observation he has used this method with very satisfactory results. He especially urged early recognition and treatment of this condition.

Dr. Mordecai Price expressed the view that the different operations performed by different surgeons for rectal disorders are due principally to the individual's familiarity with the particular operation which he prefers. Formerly he was much in favor of the Whitehead operation, but some years ago he saw a case in which the results were such as to deter him from practising it further. Since that time he has been using the clamp and cautery and has never experienced any untoward

results therewith. Regarding carcinoma of the rectum he is of the belief that there are very few, if any, cases in which it can be cured.

Dr. Lewis H. Adler considered that, notwithstanding the fact that many surgeons are opposed to operating on hemorrhoids when they are in an inflamed condition, it is better to operate at this time than to wait until the disease has made such progress that the patient is greatly weakened thereby, which will be the result in a majority of the cases, owing to the fact that when the patient is not suffering pain from the piles, he will not consent to an operation. Stress was laid upon the importance of differential diagnosis between external and internal piles and for the relief of the external variety the thermocautery was recommended. He considered the clamp and cautery superior to the ligature and believed that when this method is properly used the danger is practically nil.

Dr. Andrew J. Downes referred to the use of the ligature and also the use of the clamp and cautery and considered that one of the most essential points was to be sure not to include the skin in either the clamp or ligature, as he felt sure that this was responsible for much of the pain following either method. For the purpose of controlling hemorrhage, he recommends the electro hemostatic forceps in place of the ligature.

BOOK REVIEWS.

A MANUAL OF VENEREAL AND SEXUAL DISEASES. By WM. A. HACKETT, M.B., Ph.G., M.C.P.S. (Ont.), Professor of Dermatology and Venereal Diseases, Michigan College of Medicine and Surgery, and N. E. ARONSTAM, M.D., Ph.G., Assistant in Chemistry and Clinical Dermatology, Michigan College of Medicine and Surgery. G. P. Engelhard & Co., Chicago.

This number of the "Standard Monograph Series" is a little volume of just 200 pages that contains an excellent résumé of the important subject of venereal and sexual diseases. It is written from a thoroughly practical standpoint and will doubtless appeal to the general practitioner. There is perhaps more significance given to the subject of non-specific urethritis than is usual in text-books at the present day, and perhaps the prognosis of treatment for acute gonorrhea is more hopeful and less dubious than is justified by actual experience. With regard to syphilis nothing is said of the question of the renewal of treatment occasionally even after the original two-year course of medication is passed. In general, however, the little book is a thoroughly commendable hand-book on its subjects.

THE MEDICAL NEWS POCKET FORMULARY. By E. QUIN THORNTON, M.D., Demonstrator of Therapeutics, Pharmacy and Materia Medica in the Jefferson Medical College, Philadelphia. New (fourth) Edition. Lea Brothers & Co., Philadelphia and New York.

THE MEDICAL NEWS pocket formulary is less bulky than formerly, more easily carried in the pocket, and yet contains quite as much material as before. Altogether there are seventeen hundred well-chosen prescriptions. A certain number of new formulæ have been added for the present edition. Among these may be mentioned the use of hydrogen peroxide in the obliteration of powder stains, the internal administration of urea in the treatment of lupus, the local application of guaiacol in promoting the absorption of serous exudates, the use of apomorphine as a sedative in alcoholic delirium, the local use of adrenalin as a hemostatic, and the use of organic compounds of silver and arsenic as substitutes for the more poisonous inorganic salts. There is evidently a well-directed effort made to keep this very practical little book thoroughly up to date.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, Issued Monthly. Vol. I. General Medicine. Edited by FRANK BILLINGS, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago, With the Collaboration of S. C. STANTON, M.D. The Year-Book Publishers, Chicago.

NOTWITHSTANDING the many quarterlies and year-books of medicine, and the present custom of the medical magazines of furnishing their readers with abstracts of current medical literature, this new set of volumes which will go handily into the pocket promises to fill a want. The present volume includes diseases of the respiratory and circulatory organs, of the blood, kidneys, bladder and ductless glands, infectious and constitutional diseases, and the subject matter is well chosen. If all leading articles had mention in such a book it would be either too large, or useless on account of two great brevity in abstracting. Therefore, the editors have chosen only articles of special value, and have made their abstracts lucid and practical enough, so that it is unnecessary for the reader to consult the original articles. There are four good plates showing the skin lesions of smallpox and chicken-pox, and a few drawings in the text.

VENEREAL DISEASES. A Manual for Students and Practitioners. By JAMES R. HAYDEN, M.D., Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York. Third Edition. Lea Brothers & Co., New York and Philadelphia.

THIS number of Lea Brothers' series of pocket text-books is now in its third edition. This is of itself an indicaton of the fact that the book has found a place to fill and is filling it. For general practitioners no better résumé of the subject can be found in so brief a space. In the present edition new sections on venereal vegetations and on herpes progentalis have been added. This has not increased the size of the book, however, as certain merely theoretical considerations on the history of venereal diseases and the statistics of their occurrence have been omitted. The book is concise, compact, handy and as complete as can be expected under the circumstances.

TRANSACTIONS OF THE TWENTY-THIRD ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION, Held at New Haven, Conn., May 27-29, 1901. Rooney & Otten Printing Company, New York.

THIS, like its predecessors in the same line, is a dignified volume of transactions, admirably edited and put into the same excellent form of its companion volumes of preceding years. The articles submitted to the Association at its annual meeting are all of the same general tone of excellence. Of special interest is the historical chapter by Dr. Jonathan Wright.

The remarkable cases of empyema of the antrum of Highmore given by Dr. Emil Mayer and the splendid illustrations of his sinus cases by Dr. J. H. Bryan are of especial interest and value. The chapter on retrograde metamorphosis of the faucial tonsil is of timely interest. Other chapters of great interest and value are devoted to intubation, reflex nasal epilepsy, nasopharyngeal fibromata and the ever-timely subject of anesthesia. In all 274 pages are filled with most valuable material.